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**Adult Attachment and Mental Health: The Mediating Role of Emotion  
Regulation**

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**Adult Attachment and Mental Health: The Mediating Role of Emotion  
Regulation**

**by**

**Morgynn Lynn Haner**

**Dissertation**

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## **Dedication**

This dissertation is dedicated to Patty and James Geer. I love you more than you can know, and I'll always be your girl. Thank you for making me who I am, and for making this all possible.

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Thank you to my parents—two of the most patient and kind human beings I've ever known. I'll never forget how you let me determine my own future, how you let me embrace my independence, and how you never doubted this day would come. You saw through my teenaged rebellion and you knew that I needed to express that part of myself in order to become who I am today. I love you.

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## **Abstract**

# **Adult Attachment and Mental Health: The Mediating Role of Emotion Regulation**

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It is well established in the literature that attachment style is related to mental health. However, theory and research suggest that attachment style does not exert its influence on adults' mental health directly, but rather that it influences mental health due to its influence on a number of mediating variables. The current study tested the hypothesis that emotion regulation mediates the link between adult attachment and mental health. Five hundred and eighty-five college undergraduates completed an online survey consisting of measures of attachment style, rumination, experiential avoidance, perspective taking, distress, and wellbeing. Structural equation models tested hypotheses and perspective taking partially mediated the relationship between attachment anxiety and distress. With replications, these findings suggest promoting adaptive emotion regulation strategies in anxiously attached adults.



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## **Chapter 1: Introduction**

It is well established in the literature that attachment style is related to mental health. However, theory and research suggest that attachment style does not exert its influence on adults' mental health directly, but rather that it influences mental health due to its influence on a number of mediating variables, like emotion regulation (Mikulincer & Shaver, 2007). Since attachment style is formed early in life and thought to be relatively stable over time, a focus on a more malleable trait, like the emotion regulation strategies associated with insecure attachment styles, may lead to more targeted methods for reducing psychological distress in this population. Revealing the types of emotion regulation strategies that explain the relationship between attachment style and mental health is of particular importance.

### **Attachment Theory**

Attachment theory (Bowlby, 1969/1982, 1973, 1980) is among the most influential theories of personality and mental health (Mikulincer & Shaver, 2007). Although a central tenet of attachment theory is that the quality of close relationships in childhood influences psychological wellbeing throughout the lifespan, Bowlby's own work focused on examining the structure and function of attachment style in childhood (Bowlby, 1969/1982). However, over the past three decades hundreds of studies have investigated the nature and effects of attachment style in adulthood (e.g., Brennan & Shaver, 1995; Collins & Read, 1990; Hazan & Shaver, 1987; Mikulincer & Shaver, 2007).

### **Secure and Insecure Attachment**

Broadly, attachment orientation has been grouped into two major types: secure and insecure. Secure attachment is thought to result from sensitive, responsive caregiving

and is related to positive psychosocial adjustment and good interpersonal relationships (Mikulincer & Shaver, 2007). Insecure attachment is thought to be the consequence of inconsistent and/or unavailable caretaker and is related to relatively ineffective coping and interpersonal difficulties (Ainsworth, Blehar, Waters, & Wall, 1978; Brennan et al., 1998). While variations of insecure attachment styles have been defined in the literature over the years (e.g., preoccupied attachment, fearful attachment), recent empirical evidence suggest that it may be more accurate to characterize adult attachment in terms of the two continuous, orthogonal dimensions of attachment *anxiety* and attachment *avoidance* (Brennan, Clark, & Shaver, 1998; Fraley & Waller, 1998). Importantly, securely attached individuals are low in both of these domains.

### **Adult Attachment**

Brennan et al. (1998) conceptualized adult attachment anxiety as generally resulting from an individual's underlying belief of being essentially unlovable. They posited that adult attachment avoidance, on the other hand, results from an underlying belief that others are essentially untrustworthy or malevolent (Brennan et al., 1998). Both dimensions of insecure attachment have been shown to be related to negative affect (Simpson, 1990); lower levels of emotional adjustment (Lapsley, Rice, & FitzGerald, 1990; Rice, FitzGerald, Whaley, & Gibbs, 1995; Rice & Whaley, 1994); and interpersonal problems (Bartholomew & Horowitz, 1991; Horowitz, Rosenberg, & Bartholomew, 1993; Mallinckrodt & Wei, 2000). Conversely, securely attached individuals have been shown to experience less psychological distress and negative affect in general as compared to those with avoidant or anxious attachment styles (for a review, see Lopez & Brennan, 2000).

## Theories of Affect Regulation and Emotion Regulation

The ways in which insecurely attached adults manage distress was first explored within the framework of affect-regulation (Main, 1990; Collins et al., 2006, Mikulincer et al., 2003, Cassidy, 1994). Affect-regulation theory is an extension of attachment theory, and assumes that secure, avoidant, and attachment anxiety styles are associated with unique patterns of affect-regulation that are the result of early experiences in close relationships. A central tenet of this theory is that insecurely attached individuals are more likely than securely attached individuals to rely on psychological defenses that limit coping flexibility and generate interpersonal conflicts (Mikulincer & Shaver, 2007b).

Main (1990) posited that there are two types of “secondary attachment strategies” that insecurely attached individuals engage in when their internalized attachment systems are activated (i.e., their needs are not met and/or they are left feeling vulnerable or unsafe). These approaches to managing distress are labeled as *hyperactivating* strategies (i.e., the up-regulating of emotion) and *deactivating* strategies (i.e., the down-regulating of emotion). According to Shaver & Mikulincer (2002), whether an individual develops a tendency towards hyperactivating strategies or deactivating strategies is largely dependent on whether proximity seeking has historically been successful or not.

For individuals who experience separation from the attachment figure as aversive, despite the unavailability and/or inconsistency of that figure (i.e., attachment anxiety), proximity seeking is perceived as a viable option. Thus, the individual engages in hyperactivating strategies to upregulate their distress in an attempt to get the attention of the caregiver and ideally have their needs met. On the contrary, those who have internalized the experience of being neglected or punished for expressing attachment needs perceive attachment figures as aversive and/or proximity seeking as futile. They adapt to such circumstances by downregulating distress through the use of deactivating strategies (Main, 1990).

Although the literatures have generally been apart from one another, affect regulation theory can reasonably be considered conceptually similar to emotion regulation theory (Gross, 1998; 2007). Various emotion regulation strategies can be thought of as falling into the broader categories of hyperactivating or deactivating strategies. For instance, it's natural to view suppressive and avoidant approaches to emotion regulation (e.g., experiential avoidance) as deactivating strategies because they serve to limit the experience and expression of affect. It also makes sense to view emotion regulation strategies like rumination, which sustains and intensifies the experience of negative emotion, as a hyperactivating strategy.

According to affect regulation theory, both deactivating and hyperactivating strategies to emotion regulation, while adaptive in the short-term, have negative psychological consequences. On the contrary, individuals with secure attachment styles are thought to rely mostly on adaptive, constructive ways of managing distress. Hazen & Shaver (1987) attribute this to internalized positive expectations of others, positive views of themselves, and confidence in their ability to tolerate stress and regulate problematic emotions. Viewing this concept through the lens of emotion regulation theory, it makes sense that securely attached individuals may rely on the use of *perspective-taking approaches* like cognitive reappraisal to regulate their emotions, which is thought to result in more wellbeing and less distress (Mikulincer & Shaver, 2007).

### **Hyperactivating Strategies: Rumination**

Rumination, which can be thought of as a hyperactivating approach to emotion regulation, is described as “a pervasive focus on thoughts and feelings associated with an emotion-eliciting event” (Gross, 2010, p.503). Rumination has been shown to be associated with attachment anxiety (Mikulincer & Shaver, 2007), and has been established as both a cause and consequence of depression and anxiety (Nolen-Hoeksema, 1991). Further, a systematic review by Malik, Wells, & Wittkowski (2015)

found strong evidence in support of hyperactivating strategies as mediators between attachment style and depression.

### **Deactivating Strategies: Experiential Avoidance**

Given that affect-regulation theory associates attachment avoidance with deactivating strategies to manage emotions, it can be reasonably assumed that attachment avoidance will also be associated with experiential avoidance. *Experiential avoidance* appears to fall under the category of deactivating strategies, as it functions to downregulate distressing thoughts and feelings. However, experiential avoidance is unique in that it is described as “excessive negative evaluations of unwanted thoughts, feelings, and experiences, resulting in an unwillingness to experience these internal events” (Hayes et al., 2004). Experiential avoidance has been shown to be associated with high levels of psychological distress, is thought to increase feelings of emptiness and inauthenticity, and has been shown as related to a general lack of wellbeing (Hayes et al., 2004).

### **Perspective-taking Approaches**

Perspective taking approaches, including reappraisal, big picture appraisal, cognitive flexibility, and decentering are thought to be helpful, adaptive emotion regulation strategies and are generally characterized by an ability to consider multiple interpretations of distressing emotions and situations. These constructs have generally been shown to be associated with low levels of negative emotional experience and high levels of positive emotional experience (Gross & Thompson, 2007; Haner & Rude, 2015; Haner, Rude, & Miller, 2015; Fresco et al, 2006; Dennis & Wal, 2010). Because secure attachment has been associated with flexibility of cognitive appraisals (Zimmerman, 1999), it is likely that securely attached individuals are also more apt to develop a psychological “platform” for seeking and attaining perspective.



## **Mental Health Variables**

That the dimensions of insecure attachment (i.e., anxiety, avoidance) are related to symptoms of psychological distress and diminished wellbeing is well established in the literature (see Mikulincer & Shaver, 2007 for a review). For example, studies have shown that insecure adult attachment styles are associated with depression, anxiety, and hostility (Priel & Shamaiu, 1995; Mikulincer, Florian, & Weller, 1993; Robert, Gotlib, & Kassel, 1996); negative affect (Simpson, 1990); and lower levels of emotional adjustment (Lapsley, Rice, & FitzGerald, 1990; Rice, FitzGerald, Whaley, & Gibbs, 1995; Rice & Whatley, 1994). In contrast, multiple studies have shown that securely attached individuals experience significantly less psychological and interpersonal stress than those with insecure attachment styles (Lopez & Brennan, 2000; Mikulincer and Shaver, 2007; van Ijzendoorn & Bakermans-Kranenburg, 1996; Bartholomew & Horowitz, 1991, Brennan et al., 1998; Kafetsios and Sideridis, 2006; La Guardia et al., 2000; Lavy and Littman-Ovadia, 2011; Wei et al., 2011).

While psychological distress and wellbeing are sometimes treated as one construct (i.e., mental health), it's important to note that evidence exists in support of these constructs being only partially orthogonal (Veit & Ware, 1983). A more accurate way of conceptualizing mental health may be to treat psychological distress and wellbeing as unique, latent constructs comprised of a number of individual factors, as they will be in the present study.

## **The Current Study**

The aim of this study was to reveal the emotion regulation mechanisms by which internalized models of attachment exert their influence on adults' wellbeing and psychological distress. Since psychological distress and wellbeing have been shown as somewhat inversely related to one another but still representing distinct constructs, it was

expected that attachment styles and emotion regulation variables would be uniquely associated with each of these mental health variables. Based on previous research, it was expected that attachment anxiety would be related to psychological distress. It was also expected that this relationship would be mediated by rumination, which is assumed to be conceptually similar to hyperactivating strategies, and inversely mediated by perspective-taking approaches, which share important elements in common with adaptive affect-regulation strategies like flexibility of appraisals. It was anticipated that attachment avoidance would be inversely related to wellbeing and that this relationship would be mediated by experiential avoidance, a strategy thought to function similarly to the deactivating approaches of affect regulation, and inversely mediated by perspective-taking approaches.

Using survey data from a sample of college undergraduates, structural equation modeling techniques (SEM) were used to examine the relationships between attachment anxiety/attachment avoidance, the use of particular approaches to emotion regulation (perspective taking; rumination; experiential avoidance), and mental health variables.

## **Chapter 2: Literature Review**

### **Attachment Theory**

Attachment Theory (Bowlby, 1969/1982, 1973, 1980) is among the most developed and ubiquitous constructs in psychology, originating over half a century ago and continuing to attract the interest of scholars today. Attachment Theory is grounded in Bowlby's (1969/1982) hypothesis that a child's need for protection and proximity to its mother is fundamental for wellbeing and development, such that children whose emotional needs are met inconsistently tend to become insecurely attached, experiencing high levels of relational stress. Secure attachment results from a sense of confidence in the availability of caregivers to protect and provide for the child. Whether a child becomes securely or insecurely attached is thought to be determined during the sensitive time period between infancy and adolescence, where caregiver experiences are internalized, eventually resulting in a working model of relationships that is thought to persist relatively unchanged throughout the life span (Bowlby, 1973).

According to Bowlby, early attachment experiences have a long-lasting impact on later development and functioning. Longitudinal studies generally support this hypothesis—in examining the stability of attachment from infancy through young adulthood, most research indicates that attachment orientation is at least moderately stable (Cozzarelli, Karafa, Collins, & Tagler, 2003; Fraley, 2002). However, some research has suggested that attachment style is subject to fluidity in the face of changes in wellbeing and coping abilities, such that when individuals engage in healthier coping strategies and experience less psychological distress, they are also more secure in their attachments (Zhang & Labouvie-Vief, 2004).

#### **Attachment and adversity.**

Bowlby (1969/1982, 1973, 1980) conceptualized attachment as a “system” that functions to protect young, vulnerable children from danger and increase the likelihood

of survival. The attachment system is particularly likely to become activated when certain dangers or stressors are present, including physical and emotional stressors (i.e., hunger, separation). More recent research in adult attachment by Mikulincer and Shaver (2007) suggests that the attachment system is activated similarly in adults, but attachment threats in adulthood are distinct from those seen in childhood. For example, it has been shown that inducing negative affect can activate the attachment system (Pietromanco & Barnett, 2000) and that merely reminding individuals of their own mortality was enough to activate the attachment system (Mikulincer et al., 2000).

### **Secure attachment.**

Secure attachment is thought to result from sensitive, attuned caregiving, wherein the caregiver appropriately responds to the child's attachment behaviors (i.e., proximity seeking) most of the time. If these conditions are satisfied, the child internalizes a sense of the world being safe and others as being reliable and generally benevolent (Weinfield, Sroufe, Egeland, & Carlson, 1999). Importantly, caregivers who are attuned to a child's needs demonstrate to children that proximity-seeking is a helpful way of regulating negative emotions (Waters et al., 1998). In addition to this, securely attached children learn to view themselves and others in a positive manner, have a sense of self-worth, and view others as capable and supportive (Mikulincer et al., 2003). Mikulincer and Shaver (2007) describe the effects of successful proximity-seeking in the following manner: "This cycle – experiencing threats or distress, seeking protection and comfort from an attachment figure, experiencing stress reduction and felt security, and returning to other interests and activities – provides a prototype of both successful emotion regulation and regulation of interpersonal closeness" (p. 14).

Secure attachment is associated with a number of positive traits. Hazen & Shaver (1987) attribute this to internalized positive expectations of others, positive views of themselves, and confidence in their ability to tolerate stress and regulate problematic emotions. For example, instead of adhering rigidly to certain coping strategies, securely

attached individuals demonstrate the ability to see the situation in context and approach it with a variety of emotion management strategies that are most suitable to the situation (Mikulincer and Shaver, 2007).

For example, a securely attached individual is mostly able to keep emotional reactions at bay when the consequences of display are undesirable (i.e., expressing anger towards a teacher after being reprimanded), but is also able to be emotionally open and express frustration towards a close friend in an effort towards conflict resolution. These healthy ways of managing interpersonal conflict—compromising, integrating the perspectives of others with one's own, support seeking, and being open to discussing and resolving conflict—are all general characteristics of securely attached people (Carnelley, Pietromonaco, & Jaffe, 1994; Levy & Davis, 1988; Pistole, 1989; Larose, Bernier, Soucy, & Duchesne, 1999; Ognibene & Collins, 1998; Wallace & Vaux, 1993).

#### **Insecure attachment.**

Research beginning with Ainsworth, Blehar, Waters, and Wall (1978) and continuing through recent studies by personality and social psychologists (reviewed by Mikulincer & Shaver, 2003, 2007a), indicates that insecure attachment in adulthood is characterized by the experience of *anxiety* and/or *avoidance* in the context of close relationships (Bartholomew & Horowitz, 1991; Brennan et al., 1998).

*Attachment anxiety* reflects the degree to which a person worries that an attachment figure will not be available or responsive during times of need. This is thought to result from an inconsistent caregiver in childhood, creating in the individual an excessive need for reassurance and attention in close relationships. The anxious individual may utilize an array of unhelpful hyperactivating affect-regulation strategies (i.e., rumination, excessive emotionality) to meet these ends (Main, 1990; Collins et al., 2006; Mikulincer et al., 2003; Cassidy, 1994). Further, insecure individuals in general are more likely than secure individuals to rely on rigid psychological defenses. This tendency inherently limits one's ability to cope flexibly with distress and interpersonal conflicts,

adding to the anxious person's distress and putting strain on close relationships (Mikulincer & Shaver, 2007b).

For example, predominantly anxious individuals generally don't make active attempts to manage problematic situations in ways that generate positive side effects: Their need for soothing is great, but they have little confidence that their needs will be met. In turn, they up regulate their emotions in hopes that someone will notice and meet their needs. This paradoxically makes it less likely that an attachment figure will be responsive because that individual may become easily overwhelmed by the needs of the anxious individual. Thus, out of the attachment orientations, anxious individuals seem to experience the highest levels of psychological distress.

*Attachment avoidance*, on the other hand, results from a rejecting, punishing, or invalidating caregiver, leading the neglected child to become excessively self-reliant because he has learned that seeking proximity is futile. Deactivating strategies (e.g., suppression) are used to create an emotional distance from others (Shaver & Mikulincer, 2002). Individuals who have high levels of attachment avoidance tend to experience less frequency and intensity of psychological distress than anxious individuals. However, this is at the possible cost of dampening their emotional experiences and forgoing close social relationships that increase quality of life and could provide corrective emotional experiences (Mikulincer & Shaver, 2007). Their inner experience seems to be

characterized by a tendency to become psychologically shut down in the face of distress and a general mistrust of others. Taken together, these two core characteristics lead to an unwillingness to confide in others. However, these individuals generally appear calm and collected. This is likely a consequence of being out of touch with their own emotions as they have such highly developed mechanisms to keep distressing thoughts and feelings at bay. Further, they may be made uncomfortable by others seeking psychological intimacy with them and are unlikely to be someone who others confide in.

### **Adult Attachment.**

As opposed to a focus on relationships with parents and early caregivers, *adult attachment theory* focuses on relationships that are prominent in adulthood—particularly romantic relationships. It is assumed that attachment style in adulthood will be similar to that of childhood, because adults enter relationships with a history of attachment experiences and working models of attachment that are thought to be rooted, at least in part, in the quality of one's early attachment experiences. These cognitive-affective representations of relationships developed in childhood continue to shape how adults think about, feel towards, and behave in their current relationships. Characteristics of anxious adults are a tendency to experience emotional extremes, jealousy, and conflict; avoidant adults report low levels of intimacy and commitment as well as less stable relationships; secure adults tend to experience satisfying, well-functioning relationships (Feeney, 1999).

For example, *secure* adults are comfortable with closeness, feel valued by others and worthy of affection, and perceive others as trustworthy and responsive. They report high levels of satisfaction with interpersonal relationships and low levels of interpersonal distress (Mikulincer & Shaver, 2007). Mikulincer (1997) found that secure attachment in adults is associated with the ability to skillfully regulate distressing emotions, which theoretically may lend itself to openness to novel information and development of adaptive strategies to cope with environmental demands. Additionally, securely attached adults have been shown to appraise a wide variety of stressful events in less threatening terms than insecure people (e.g. Berant, Mikulincer, & Florian, 2001a, 2001b; Birnbaum, Orr, Mikulincer, & Florian, 1997; Mikulincer & Florian, 1995, 1999; Radecki-Bush, Farrell, & Bush, 1993). They are also more apt to acknowledge and display a range of emotions, which is thought to be a consequence of their ability to access unpleasant feelings and memories without being overwhelmed by them (Hesse, 1999). All of these

characteristics contribute to high levels of cognitive and emotional openness and the ability to readily revise faulty information in the face of new evidence.

Anxious adults deeply desire closeness but are frequently worried about rejection and abandonment. They depend greatly on acceptance by others in order to consider themselves worthy, but lack confidence that others value them and will be available in times of need. Avoidant adults may desire social contact and keep a number of acquaintances with ease, but they are uncomfortable with intimacy because they expect to be rejected in times of need and/or perceive people as unreliable and uncaring. While avoidant adults may experience less frequent and intense negative feelings than their anxious counterparts, the denial of attachment needs and lack of social connectedness is thought to diminish wellbeing (Bartholomew & Horowitz, 1991; Collins & Read, 1990; Fraley, Davis, & Shaver; Hazan & Shaver, 1987; Mikulincer, 1998a; Mikulincer, Orbach, & Iavieli, 1998; Simpson, 1990).

#### **Measuring attachment style.**

Importantly, Bowlby's original theory has resulted in two unique paradigms—that of the developmental psychologists (Ainsworth, Blehar, Waters, & Wall, 1978), who relied on observation of infant-parent relationships to determine attachment style (AT), and that of the social psychologists (Hazan & Shaver, 1987; see Feeney, 1999b, for a review) who applied Ainsworth's (1978) developmental theory to adult romantic relationships. Although the former focuses on infancy and the latter on adulthood, they share Bowlby's general conceptualization of secure and insecure attachment styles and associated affect regulation strategies. While both lines of thought are relevant to discussion in the context of this study, social and personality methods for assessing and conceptualization attachment will be emphasized because they pertain specifically to adult attachment.

The question of how to best measure attachment style has been difficult to answer definitively, both due to the theoretical split mentioned above and to the difficulty of



establishing satisfactory psychometric properties. Within the psychodynamic tradition, the measure of choice historically has been the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1985), a clinical interview focusing on mental representations of parent-child relationships. However, the extensive time required for training, administration, and interpretation has kept it from being especially practical in large research studies.

In the social psychology tradition, early self-report measures of attachment were categorical in nature (i.e., forcing individuals into one of four discrete categories) and thus suffered from numerous psychometric limitations (see Brennan, Clark, & Shaver, 1998; Fraley & Waller, 1998; Griffin & Bartholomew, 1994, for discussions). Using a taxonomic approach, Meehl (1995) and Waller & Meehl (1998) made a strong empirical case that adult attachment doesn't fit a categorical model, and thus attempts to impose categorical models on attachment style could lead to serious problems in analysis and conceptualization. Rather, a continuous measurement approach that can account for variations and nuances in AT is recommended (Fraley & Waller, 1998).

Social psychology research began to focus on developing measures of AT that treated it as a continuous variable—specifically, Brennan et al. (1998) began focusing on dimensional models of attachment and on developing a corresponding multi-item, self-report measure of AT—the Experiences in Close Relationships scales (ECR). The measure appeared to have limitations, including a crude scoring method, and in an effort towards further precision, Fraley, Waller, and Brennan (2000) used Item Response Theory (IRT) to test whether the ECR scales, along with three other measures of AT, possessed adequate psychometric properties. Of the four measures investigated, only the ECR scales revealed adequate psychometric properties. The ECR scales were then refined using IRT to select the most useful items, and as a result, their measurement precision was drastically increased (Fraley, Waller, & Brennan, 2000). Now, the ECR

scales are widely accepted as one of the most reliable and valid ways to measure attachment when conducting an attachment interview is not an option.

While many researchers view the AAI as a more sensitive and comprehensive measure of attachment style, it is difficult to utilize with larger sample sizes due to the amount of time and resources it takes to administer and interpret. In general, the self-report ECR scales seem to be the next best choice for large empirical studies of adult attachment, as they have demonstrated the best reliability and validity of the self-report attachment measures. While theory suggests that the two types of measures are tapping into the same attachment construct, few studies have investigated whether this is true. There is less convergence in research findings on adult romantic relationships from studies using the AAI and self-reports than one may expect given the common theoretical roots of the two traditions. Thus, future studies are needed to shed light on whether or not the two measures tap the same attachment construct and whether the AAI or self-report measures are more stable indicators of attachment over time (Jacobvitz, Curran, & Moller, 2002).

### **Affect Regulation Theory**

The ways in which insecurely attached adults manage distress was initially explored within the framework of affect-regulation (Main, 1990; Collins et al., 2006, Mikulincer et al., 2003, Cassidy, 1994). Affect-regulation theory is an extension of attachment theory, and assumes that secure, avoidant, and anxious attachment styles are associated with unique patterns of affect-regulation that are the result of early experiences in close relationships. A central tenet of this theory is that insecurely attached individuals are more likely than securely attached individuals to rely on psychological defenses that limit coping flexibility and generate interpersonal conflicts (Mikulincer & Shaver, 2007b).

Main (1990) proposed two types of “secondary attachment strategies” that insecurely attached individuals engage in when their internalized attachment systems are

activated (i.e., their needs are not met and/or they are left feeling vulnerable or unsafe). These approaches to managing distress are referred to as *hyperactivating* strategies (i.e., the up-regulating of emotion) and *deactivating* strategies (i.e., the down-regulating of emotion). According to Shaver & Mikulincer (2002), whether an individual develops a tendency towards hyperactivating strategies or deactivating strategies is largely dependent on the futility or success of proximity seeking.

For individuals who experience separation from the attachment figure as aversive, despite the unavailability and/or inconsistency of that figure (i.e., attachment anxiety), proximity seeking is perceived as a viable option. Thus, the individual engages in hyperactivating strategies to upregulate their distress in an attempt to get the attention of the caregiver and have their attachment needs met. On the contrary, those who have internalized the experience of being neglected or punished for expressing attachment needs perceive attachment figures as aversive and/or proximity seeking as futile. They adapt to such circumstances by downregulating distress through the use of deactivating strategies (Main, 1990).

#### **Attachment avoidance and deactivating strategies.**

According to Mikulincer & Shaver (2007, p.22) the purpose of deactivating strategies is to “avoid frustration and distress caused by attachment figure unavailability” and to emphasize one’s lack of need for others and self-reliance (Shaver & Mikulincer, 2004). Further, individuals who demonstrate higher levels of attachment avoidance and who rely on deactivating strategies are characterized as emotionally inhibited, in that they limit their expression of affect, and particularly of negative affect (Magai, 1999; Mikulincer, et al., 2003; Mikulincer & Shaver, 2007; Wei, Vogel, et al., 2005).

Because suppressive and avoidant approaches to regulation emotions are by definition deactivating approaches (i.e., they function to limit the experience and expression of affect), it is thought emotion regulation strategies like experiential avoidance and suppression are associated with attachment avoidance. Generally

supporting this idea is work by Shaver & Mikulincer (2002), which posited that avoidant individuals' affect regulation is likely to be characterized by the use of preemptive strategies (e.g., purposeful inattention to distress) and response-focused and distancing strategies (e.g., suppression of emotion). Empirical evidence also suggests the existence of these relationships—Fraley & Shaver (2007) found that avoidant individuals tend to not acknowledge the experience of negative emotions.

#### **Attachment anxiety and hyperactivating strategies.**

Mikulincer and Shaver (2007) suggested that attachment anxiety is associated with attempts to sustain and intensify the experience of negative emotions, rather than to minimize it. By engaging in hyperactivating strategies like emotional reactivity, anxious individuals attempt to receive attention from others by drawing attention to themselves (Wei et al., 2005). Further, individuals who demonstrate higher levels of attachment anxiety have been consistently found to appraise stressful events as more threatening, to have a low stress-resistant attitude and to use emotion-focused coping by directing attention toward their own distress (Birnbaum et al., 1997; Mikulincer & Shaver, 2007; Neria et al., 2001), suggesting low utilization of both reappraisal and suppression and high utilization of strategies such as rumination (see section on *hyperactivating strategies: rumination*).

#### **Secure attachment and perspective-taking approaches.**

Securely attached individuals are most likely to use adaptive emotion regulation strategies. Theoretically, this is due to emotionally responsive caregiving that is characteristic of secure attachment, wherein securely attached individuals internalize experiences of their “emotional signals” being noticed and responded to. Mikulincer & Shaver (2007) proposed that the emotion regulation strategies used by securely attached individuals tend to be antecedent-focused (i.e., modifying a situation as to minimize distress rather than attempting to minimize distress caused by the situation). Further, they

are thought to be more able than insecure attachment types to tolerate negative emotions and are likely to use *cognitive reappraisal* to regulate their emotions.

Additionally, Waters (1999) and Zimmerman (1999) posited that secure individuals who use adaptive emotion regulation strategies are able to flexibly modify the types of emotion regulation strategies used based on the environmental demands of a particular situation, and empirical evidence from the same study suggested that secure attachment is indeed associated with flexibility of cognitive appraisals. Zimmerman (1999) proposed that this may be because securely attached individuals are more easily able to access their own behavior and feelings in order to consider them during the regulation process. It makes conceptual sense that each of these characteristics might lend themselves to the development of a psychological “platform” for seeking and attaining perspective.

### **Emotion Regulation Theory**

Given that attachment theory has been broadly defined as a theory of how individuals develop patterns of affect-regulation (AT) in childhood that persist in some form into adulthood, it makes sense conceptually that AT has implications to and associations with another theoretical domain, emotion regulation theory (ER). Cassidy (1994) conceptually expanded upon this idea, delineating the influence of attachment style on individual differences in emotion regulation by building upon the idea that generally, securely attached individuals are flexible in their ability to accept, integrate, and regulate both positive and negative emotions. Contrarily, insecure individuals are thought to rigidly engage in either hypo- or hyper-activating emotion regulation strategies. Because attachment style is thought to be relatively stable over time, and because insecure attachment styles are particularly problematic when individuals are under stress, researchers have begun to establish the mediating role of emotion regulation in the relationship between attachment style and negative affect (Wei et al., 2005). For the purpose of clarity in the following sections, an important underlying assumption is

that particular types of emotion regulation strategies naturally fall in line with the hyperactivating and deactivating affect-regulation strategies (i.e., rumination is considered a hyperactivating strategy; suppression is considered a deactivating strategy).

In investigating this relationship, researchers have tended to explore emotion regulatory processes as defined by Emotion Regulation Theory (ER; Gross, 1998; 2007). According to ER theory, emotions arise in reaction to internal or external stimuli and can be positive or negative. While emotions play an important role in influencing behavioral responses, decision-making, and memory, they are not always helpful. For example, emotions can occur at the wrong time or at the wrong intensity level (Gross & Thompson, 2007). In response to this, individuals have developed a natural tendency to regulate their emotions, *or attempt to influence the experience and expression of their emotions* (Gross, 1998; 2007). Importantly, emotion regulation can be done consciously or unconsciously and regulatory strategies may be automatic or controlled. Much like attachment style, emotion regulation has become clinically relevant due to its relationship with general psychological distress, as well as its proven explanatory role in over half the DSM-IV Axis I diagnoses and all Axis II diagnoses (Gross & Levenson, 1997).

### **The modal model of emotion.**

According to Gross & Thompson (2007), three core features of emotion make up the modal model of emotion: “a person-situation transaction that compels attention, has particular meaning to an individual, and gives rise to a coordinated yet flexible multi-system response to the ongoing person-situation transaction.” This situation-attention-appraisal response sequence begins with an internal or external situation that is psychologically relevant. Regardless of the nature of the situation, it is attended to in various ways that give rise to appraisals that inform the individual’s assessment of the situation’s familiarity, valence, and value relevance (Gross & Thompson, 2007). Most emotion theorists agree that it is these appraisals in particular that give rise to emotional responses.

### **Core features of emotion regulation.**

Individuals regulate both positive and negative emotions internally and externally. Emotion regulation occurs at five points: situation selection, situation modification, attentional deployment, cognitive change, and response modulation (Gross & Thompson, 2007). What makes each of these families unique is the point at which they occur in the emotion-generative process: the first four are antecedent focused, in that they occur before appraisals give rise to full blown emotional response. The fifth occurs after the emotional response has been triggered.

**Situation selection.** This is the most forward looking approach to emotion regulation in that it involves taking actions that will make it more or less likely that we end up in situations that we expect will bring about desirable or undesirable emotions. The biggest issue with this approach is that people often profoundly over- or underestimate the extent to which a situation will provoke an emotional response (e.g., overestimating the duration of negative emotions). Another relevant drawback to this approach is that individuals often focus on short-term benefits instead of long-term costs (e.g., a shy person avoids a social situation and feels better in the short-term, but the long-term cost of this is this is social isolation).

**Situation modification.** Individuals can make efforts to directly modify a situation so as to alter its emotional impact. Essentially, situations that can potentially induce an emotional response do not always have to elicit an emotional response, at least not to the caliber we anticipate. Parents often modify situations for their children in order to reduce the likelihood of distressing emotions (e.g., helping with a frustrating game) as well as to increase experiences of positive emotion (e.g., planning an elaborate birthday party). In adults, situation modification is often in the form of assisting in problem solving or confirming the legitimacy of an emotional response in another. At its core, situation modification involves the modification of external, physical environments and

efforts at modifying internal environments in order to produce cognitive change (Gross & Thompson, 2007).

**Attentional deployment.** It is very possible to regulate emotions without actually altering the physical environment. Attentional deployment has to do with how individuals direct their attention within a situation in order to influence their emotions. This is considered an internal version of situation modification and is used from infancy to adulthood, particularly when situation selection and situation modification are not possible. Attentional deployment comes in various forms, one being *distraction*, wherein an individual focuses their attention on different aspects of the situation or directs attention away from the situation altogether. It can also involve changing internal focus by calling forth thoughts or memories that are inconsistent with the undesired emotional state. *Concentration* is somewhat the inverse of distraction, in that it draws attention to emotional features of a situation. A well-known maladaptive form of attentional deployment is *rumination*, which involves repetitive focus on feelings associated with stressful events and a negative evaluation of their consequences (Bushman, 2002; Morrow & Nolen-Hoeksema, 1990). Not surprisingly, rumination has a strong relationship with depression (Gross & Thompson, 2007; Werner & Gross, 2010).

**Cognitive change.** Even though cognitive change is late in the emotion-generative process, a particular emotional response is by no means set in stone. Cognitive change refers to altering our appraisal of the situation in order to alter its emotional significance. Cognitive change includes changing the way we think about the situation or changing the way we think about our capacity to manage the demands it poses. One form of cognitive change that has recently gained momentum is *reappraisal*, the veil of emotion regulation that big picture appraisal falls under. Reappraisal involves internally changing the meaning of a situation so that it alters its emotional impact. Gross & James (2007) posit that over time, reappraisal plays an important role in shaping how an individual views the self, others, and the environment.



**Response modulation.** As previously mentioned, response modulation occurs after an emotional response has been initiated. It thereby refers to an individual's ability to influence the physiological, experiential, or behavioral responding as directly as possible (e.g., drugs, exercise, relaxation, alcohol, cigarettes, food). Another form of response modulation is *expressive suppression*, wherein an individual alters his or her external display of emotion, often hiding true feelings from others. It is important to consider the context of response modulation—some ways of regulating one's emotions after the emotion has occurred may appear maladaptive, but upon consideration of the circumstances it may come clear that a “maladaptive” response was actually the only adaptive response to the particular situation (e.g., coping with an emotionally abusive family). Furthermore, it is important to consider cultural values in determining what constitutes an adaptive or maladaptive response (e.g., expressing negative emotion may be viewed by Americans as appropriately assertive, but by Nepalese adults as very inappropriate) (Gross & Thompson, 2007).

#### **Measuring emotion regulation.**

Because surveying all of the many emotion regulation strategies at once isn't feasible, the focus of most studies has been narrowed to strategies that fall under the veil of *suppression* and *reappraisal*, described by Gross & John (2003) as commonly used ER strategies that are strongly linked to individual differences. Gross & John (2003) developed a 10-item self-report measure of reappraisal and suppression, the ERQ (Emotion Regulation Questionnaire). For each item, the researchers designated whether it intended to measure suppression or reappraisal—for example, “I control my emotions by changing the way I think about the situation I'm in” targets the use of reappraisal, and “I control my emotions by not expressing them” describes suppression. Based on the number of suppression and reappraisal items endorsed, individuals are classified as being mostly “suppressors” or mostly “reappraisers.”

#### **Suppression.**

Suppression, or the tempering or containing of natural emotional reactions, occurs after an emotional response has been initiated and refers to an individual's ability to influence the physiological, experiential, or behavioral responding as directly as possible (Gross & Thompson, 2007). Since suppression comes so late in the emotion generative process, it primarily modifies the behavioral aspect of emotion response tendencies, specifically referred to as *expressive suppression*. While efforts to conceal emotional reactions to others via expressive suppression may be successful, frequent use of this ER strategy can have the unintended consequence of dampening the expression of positive emotion as well (Gross & John, 2003). Most importantly, suppression is only helpful in reducing the expression of negative emotion, not the internal *experience* of negative emotion itself—which could potentially contribute to an accumulation of unresolved negative emotions. Other consequences of frequent use of suppression include the depletion of cognitive resources due to the effortful management of emotion response tendencies as they arise (Gross & John, 2003) and a sense of incongruence between inner experience and outer expression that may lead to feelings of inauthenticity and alienation (Rogers, 1951; Sheldon, Ryan, Rawsthorne, & Illardi, 1997).

Although frequent, pervasive use of suppression as a means to regulate emotions has been linked to low levels of psychological wellbeing in the general population (Gross & Levenson, 1997), it's important to note that depending on the context in which it is deployed, suppression can be an adaptive or maladaptive emotion regulation strategy. For example, the ability to suppress an emotional response is often necessary in order to maintain social appropriateness (e.g., an employee suppressing anger towards boss while a customer is present), but when used pervasively and across contexts (e.g., the employee continues to suppress the anger even when no longer in the room with the customer) it can become problematic. Given the importance of context in emotion suppression, it becomes important to investigate the nuances of this phenomenon.

### **Reappraisal.**

Reappraisal is defined as *a form of cognitive change that involves construing a potentially emotion-eliciting situation in such a way that it changes its emotional influence* (Gross & John, 2003; Werner & Gross, 2010). For example, during a job interview, one might view the experience as an opportunity to find out whether the job is a good fit, rather than as a test of one's worth. Reappraisal of stressors is widely considered an adaptive emotion regulation strategy because it does not demand a high level of cognitive resources and because it can alter emotion-generative processes at an early stage of processing.

Gross & John (2003) conducted a series of studies that investigated the benefits of reappraisal in contrast to the use of suppression. The research revealed that in general, reappraisal is a more helpful ER strategy than suppression when used habitually. For example, reappraisers tend to negotiate stressful situations by taking an optimistic attitude and making efforts to reinterpret information they find distressing, while suppressors handle negative affect by masking their feelings and being careful not to outwardly display emotion. Reappraisers also reported experiencing and displaying more positive emotions than suppressors, but at the same time are willing to share both positive and negative emotions with others, resulting in a better quality of relationships overall. Suppressors view their emotions in a less favorable light than reappraisers and therefore are less apt to be open about them. Suppressors also tend to have less positive emotional experiences and more problematic feelings of inauthenticity, while reappraisers have higher levels of self-esteem, wellbeing, and life-satisfaction than suppressors.

### **Perspective Taking Approaches**

#### **Big picture appraisal.**

Research thus far has shown that reappraising stressors can be helpful, but understanding types of reappraisals that are helpful is still being explored. Scholars have recently focused on one promising type of reappraisal, *big picture appraisal*, which consists of "broadening one's perspective on distressing events and emotions by flexibly

considering various contexts of a distressing situation in order to reveal additional meanings, attributions, and implications of the event” (Miller, Haner, Rude, 2015). For current conceptual purposes, we tentatively suggest three dimensions of big picture appraisal that are neither exhaustive nor mutually exclusive: (1) an extended time perspective; (2) the broader context of one’s life goals; and (3) the broader human context. While conceptually these dimensions are distinct, research has not confirmed the existence of separate domains of big picture appraisal.

The first dimension is consideration of how the event and/or one’s reactions to it fit into an extended time perspective. This perspective entails an awareness of the transience of emotional states, the fact that adverse situations are inevitable, and that distress has a natural ebb and flow (Miller, Rude, & Haner, 2015). We hypothesize that maintaining an awareness of the effects of time on emotional states may contribute to emotional health by allowing individuals to be less distressed by states of emotional pain.

A second dimension of big picture thinking is consideration of how setbacks or adverse experiences fit into the broader context of personal life goals (Miller, Rude, and Haner, 2015). What time tends to teach people is that unwanted events often do not thwart their most important life pursuits, or at least not to the extent initially thought. Alternative ways of realizing these higher level goals often become apparent, or sometimes new, equally valued personal life goals emerge. Furthermore, it is not infrequent that unwanted events bring about unexpected benefits, including growth and learning.

Finally, a third dimension of big picture thinking mentioned by Miller and Rude (2015) is consideration of how one’s experience fits into a broader human context in which fundamental similarities across all people’s goals and experiences are apparent. One benefit of such a perspective seems to be that it helps individuals avoid taking things too “personally,” de-emphasizing their views of such events as “about” them or as

reflecting important information about them, in favor of seeing the event or reactions to the event as something that links or connects them to others.

Overall, perspective-taking approaches require a degree of psychological flexibility and ability to see things beyond oneself and one's immediate needs and reactions (e.g., decentering). Perspective-taking approaches may also involve the ability to see difficult situations as within one's control and to generate multiple alternative solutions to difficult situations (e.g., cognitive flexibility).

**Linking big picture appraisal to outcomes.** Supporting the concept and usefulness of big picture appraisal, Rude, Mazzetti, Pal, and Stauble (2011) found that college students who reported a recent interpersonal rejection experienced lower levels of rumination after receiving an experimental big picture intervention. Participants in the intervention condition were asked to write in response to probe questions that encouraged considering how they would feel about the experience in one to two years, how their responses were similar to those of other people, and how a neutral observer might view the situation, as compared to either of two control interventions who were asked to write about the reasons for the events and their reactions to it or not write about their experience at all. Baum and Rude (2013) showed that those writing about adverse personal events with attention to the universality and normality of adversity and distress experienced lower depression symptoms than a control group at a one- and six-month follow-up assessments, although this benefit was limited to participants without elevated depression at the beginning of the study. Further, Miller, Rude, and Haner (2015) used an implicit induction of big picture thinking (participants read multiple vignettes concluding with a big picture interpretation without being encouraged explicitly to think differently) and found that big picture thinking increased and generalized to new situations and decreased emotional reactivity after a failure experience.

Several other researchers have shown the benefits of taking a broadened perspective, including Kross and Ayduk (e.g. Kross and Ayduk, 2011, 2008; Ayduk and

Kross 2010) who showed that participants instructed to take a *self-distanced* perspective on a distressing event (e.g., “...take a few steps back and move away from your experience... watch the experience unfold as if it were happening all over again to the distant you..” Kross and Ayduk 2008, p.926) experienced less rumination, less distress, and lower physiological reactivity than individuals who took a self-immersed perspective (e.g. “... relive the situation as if it were happening to you all over again” Kross and Ayduk, 2008) or adopted a distraction strategy. Further, Schartau et al. (2009) proposed the importance of *perspective broadening*, wherein individuals are encouraged to broaden their perspective by practicing remembering that time heals, finding a silver lining, and accepting that bad things happen. In a series of studies, Schartau et al. (2009) showed that individuals encouraged to broaden their perspective in this way showed lower levels of self-reported negative emotion and electrodermal responses after watching a series of distressing films than control participants.

**Measuring big picture appraisal.** In an effort towards the creation of sound measurement of big picture appraisal, three studies by Haner and Rude (2015) established the psychometric properties of a processing measure, the Scrambled Sentences Test for Big Picture Appraisal (SST-BPA). Study 1 established the content validity of the SST-BPA by showing that judges rated SST-BPA items as consistent with a description of the construct. In Studies 2 and 3, participants completed paper and computer-administered versions (respectively) of the SST-BPA along with self-report measures of similar and dissimilar constructs. Item-total correlations supported internal consistency and correlations with other measures supported convergent and discriminant validity of the SST-BPA, with correlations between measures of constructs thought to be similar (self-compassion, reappraisal, openness to experience) in the moderate to high range and correlations between dissimilar measures generally low to nonexistent (social desirability, suppression, negative affect).

In further effort to support and establish BPA as an emotion regulatory strategy, a self-report measure of BPA, the Big Picture Appraisal Questionnaire (BPAQ), was simultaneously developed by Gill, Rude, Miller, & Haner (under review). An initial pool of items was created using theory, an informal focus group, a pilot study, and interviews. Reliability and validity were established across two studies: Internal consistency was found to be high (Cronbach's  $\alpha = .91$ ) and correlations with measures of similar and dissimilar constructs were generally supportive of convergent-discriminant validity. Correlations between the BPAQ and three inventories judged to measure similar constructs (self-compassion, reappraisal, openness to experience) in the moderate to high range, but none were so high as to cast doubt that the BPAQ measures a unique construct. Further, correlations with social desirability, rumination, suppression, and negative affect were weak, and correlations with measures of neuroticism and positive affect were slightly stronger but still in the low range. Investigation of the factor structure of the BPAQ is ongoing, and it remains unclear whether the proposed items measure a one-dimensional construct (i.e., big picture appraisal), or several distinct dimensions of big picture appraisal (i.e., transience of time, broader life context, common humanity, etc.). This investigation is in process and is important to establishing the construct of big picture appraisal.

### **Deactivating Strategies: Experiential Avoidance**

When proximity seeking is appraised as a nonviable option for regulating distressing emotions, active attempts to handle the distress alone occur. These secondary strategies of affect regulation are called deactivating strategies (Cassidy & Kobak, 1988). The primary goal of these strategies is to avoid further distress and frustration caused by attachment-figure unavailability, which can ultimately lead to the denial of relational needs in general. This may include a focus on remaining cognitively and emotionally distant from others, and over time, this tendency tends to broaden to distancing oneself

from distress in general, whether it is attachment related or not (Mikulincer, Shaver, & Pereg, 2003).

One strategy for regulating emotions that appears similar to deactivating strategies (e.g., suppression, repression, failure to acknowledge negative emotions) is experiential avoidance (Hayes et al., 1996; 2004). Closely related to suppression but encompassing a broader spectrum of avoidance, experiential avoidance (EA) is unique in that it involves excessive negative evaluations of unwanted thoughts, feelings, and experiences, resulting in an unwillingness to experience these internal events and a deliberate effort to control or escape them, even when doing so causes harm in the long run (Hayes, Strosahl, & Wilson, 1999). Although the avoidance of distressing emotions in the short term can be beneficial, it can have negative psychological consequences when applied rigidly and inflexibly for a long period of time (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). Not only are cognitive resources expended on struggling to keep unwanted private experiences at bay, leading to decreased functioning, but this type of avoidance has also been shown to contribute significantly to psychological distress. Efforts to escape or avoid these private psychological experiences are often futile or interfere with valued actions (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996).

Hayes et al. (2004) defined experiential avoidance as an unwillingness to experience painful emotions, thoughts, and memories, resulting in the temporary reduction of negative affect via a variety of avoidance behaviors (e.g., substance abuse, self-injury, deliberate thought suppression). ACT researchers grounded their theory in Relational Frame Theory (RFT; Hayes, Barnes-Holmes, & Roche, 2001), beginning with the fundamental idea that the bidirectionality of human language greatly expands the range of situations that are aversive because symbolic behavior permits the categorization of private events and contact with them in almost any setting. For example, people are taught to categorize a loose set of situational cues, bodily sensations, behavioral predispositions, and so on as “anxiety” and to evaluate it as “bad.” This “emotion” can



then be recalled or predicted via language (e.g., “I felt anxious at school last week” or “I am afraid I will get anxious when I get on the plane”).

Thus, ACT researchers suggested that psychological pain cannot be avoided purely by avoiding external situations because aversive states of this kind can be brought into a situation via language itself. Therefore individuals focus avoidance on negatively evaluated private experiences, and thoughts that are linked to aversive emotions can be actively avoided or suppressed (Hayes et al., 2004). Thought suppression and other types of avoidance may produce immediate positive effects and thus make EA appear to be an attractive and useful emotion regulation strategy. However, this excessive cognitive entanglement (particularly with negative self-referential evaluations and excessively negative evaluations of private experiences) leads to many unproductive attempts to regulate private experiences and results in the inability to take needed action in the face of private events. For example, the immediate effect of cognitive distraction is a reduction of the avoided thought, but it is only over time that the avoided thought increases in frequency (Gold & Wegner, 1995). Researchers hypothesize that this pattern of short term reduction of aversive emotions actually leads to a long term increase, which in turn establishes a self-amplifying loop that might be fairly resistant to change (Hayes et al., 2004).

Importantly, this conceptualization of EA is distinguishable from the related construct of neuroticism or negative emotionality. Instead of thinking of EA as an individual’s actual or perceived negative affect (what someone is feeling), it can be thought of as an individual’s *relationship* with negative affect (how someone *responds* to what they are feeling). For example, changes in EA could presumably lead to improved functioning even in the continued presence of negative emotions (Hayes et al., 1999). Despite this conceptual distinction between neuroticism and EA, some researchers still question whether the actual experience of negative affect and corresponding emotion regulation strategies can be reliably distinguished (Zinbarg & Mineka, 2007).

Distinguishing EA and neuroticism can also pose a problem because neuroticism is such a pervasive factor associated with multiple forms of psychopathology (Khan, Jacobson, Gardner, Prescott, & Kendler, 2005; Mineka, Watson, & Clark, 1998; Watson, Clark, & Harkness, 1994) just as EA has proven to be. In order for the concept of EA to be of clinical importance, researchers must distinguish EA from neuroticism by showing that EA exhibits incremental predictive power not solely attributable to neuroticism (Chmielweski et al., 2011).

**Measuring experiential avoidance.** Multiple self-report inventories developed to measure EA have been developed over the past decade and are currently in use. In order to empirically investigate the construct, Hayes and colleagues (2004) developed the Acceptance and Action Questionnaire (AAQ) and subsequently, the revised and more psychometrically sound AAQ-II (Bond et al., 2011). The revised AAQ-II assesses the construct referred to as, variously, acceptance, experiential avoidance, and psychological inflexibility and scores have consistently predicted a range of outcomes, including mental health to work absence rates, that are consistent with underlying theory. Examples of items include “I’m afraid of my feelings”, “My painful experiences and memories make it difficult for me to live a life that I would value,” and “It’s OK if I remember something unpleasant” (reverse coded). In general, the AAQ-II seems to measure internal attitudes towards emotional experiences that contribute to avoidance, but does not assess for the extent to which individuals avoid their emotions either cognitively or behaviorally.

Because of the brevity and narrow focus of the AAQ-II, as well as issues around poor discriminant validity with neuroticism, a separate group of researchers developed The Multidimensional Experiential Avoidance Questionnaire (MEAQ; Chmielewski et al., 2011), designed to be a comprehensive, psychometrically sound measure of experiential avoidance that provides adequate coverage for the different manifestations of EA. Importantly, the MEAQ taps into behaviors, thoughts, and emotions, based on the thinking that different domains of avoidance are differently related to psychopathology.

Items load on particular subscales that include behavioral avoidance (e.g., “I won’t do something if I think it will make me uncomfortable”), distress aversion (e.g., “If I could magically remove all of my painful memories I would”), repression/denial (e.g., “I sometimes have difficulties identifying how I feel”), distraction/suppression (e.g., “When something upsetting comes up, I try very hard to stop thinking about it”), procrastination (e.g., “I tend to put off unpleasant things that need to be done”), and distress endurance (e.g., “People should face their fears”).

### **Hyperactivating Strategies: Rumination**

Hyperactivating strategies to manage emotions are thought to occur due to an inconsistent and/or unreliable attachment figure in childhood. Because the attachment figure is sometimes available, proximity seeking still appears to be a viable option. Thus, in the face of uncertainty whether attachment needs will be met, the individual up-regulates distressing emotions and displays of distress in order to attain proximity, security, and love (Cassidy & Kobak, 1998; Mikulincer, Shaver, & Pereg, 2003). Generally, hyperactivating strategies include clinging and controlling responses in the context of close relationships, as well as cognitive and behavioral efforts aimed at maximizing closeness to them (Shaver & Hazan, 1993). According to Shaver & Mikulincer (2002), hyperactivating strategies entail the close monitoring of threats to the self and attachment-figure unavailability. Consequently, social and emotional threats, as well as the potential negative causes of these threats, are exaggerated and the negative emotional responses to the threats are intensified (Mikulincer, Shaver, & Pereg, 2003).

People who primarily utilize hyperactivating strategies tend to react to stressful events with intense psychological distress and to ruminate on threat-related worries (see Mikulincer & Florian, 1998, for a review). Nolen-Hoeksema (1991) defined rumination as focusing passively and repetitively on one’s symptoms of distress (e.g., “life is such a struggle,” “I’m so tired and unmotivated”) and on the meanings of those symptoms (“Why am I so depressed,” “I’m going to lose everything if I don’t get it together”).

While individuals who ruminate are conceptualized as paying too much attention to their negative moods, they also don't tend to take action to correct the issues that they ruminate over (Nolen-Hoeksema, 1991).

### **Linking Attachment Style to Mental Health**

That the dimensions of insecure attachment (i.e., anxiety, avoidance) are related to symptoms of psychological distress and diminished wellbeing is well established in the literature (see Mikulincer & Shaver, 2007 for a review). For example, studies have shown that insecure adult attachment is associated with depression, anxiety, and hostility (Priel & Shamaiu, 1995; Mikulincer, Florian, & Weller, 1993; Robert, Gotlib, & Kassel, 1996); negative affect (Simpson, 1990); and lower levels of emotional adjustment (Lapsley, Rice, & FitzGerald, 1990; Rice, FitzGerald, Whaley, & Gibbs, 1995; Rice & Whatley, 1994). In contrast, many studies have shown that securely attached individuals experience significantly less psychological and interpersonal distress than those with insecure attachment styles (Lopez & Brennan, 2000; Mikulincer and Shaver, 2007; van Ijzendoorn & Bakermans-Kranenburg, 1996; Bartholomew & Horowitz, 1991, Brennan et al., 1998; Kafetsios and Sideridis, 2006; La Guardia et al., 2000; Lavy and Littman-Ovadia, 2011; Wei et al., 2011).

It has also been shown that the quality of attachment influences the degree of psychosocial impairment and symptom severity that individuals experience. Evidence for this relationship comes from a study by Eng et al. (2001) that investigated the associations between attachment style, social anxiety, and psychosocial functioning. The researchers found that individuals with social anxiety who were classified as anxiously attached showed greater symptom severity, more depression, and functional impairment than those with social anxiety who were classified as securely attached.

### **Depression.**

The link between insecure attachment and depression in adulthood has been established, with anxiously attached individuals suffering from the condition at a higher

rate than those who are predominantly avoidant in their attachments or securely attached (Lopez et al., 2001). This makes sense in the context of models of depression vulnerability, which posit that negative early experiences, such as exposure to childhood abuse or neglect, increase vulnerability to depression later in life. Although many individuals with a history of adverse childhood experiences do not go on to develop depression, research has shown that these experiences do indeed lead to increased vulnerability to depression (Wells et al., 2014). Further, the research on cognitive vulnerability to depression shows that insecure attachment types are related to lower self-esteem and greater dysfunctional attitudes (Gamble & Roberts, 2005; Srivastava & Beer, 2005), and that these factors in turn are associated with depressive symptomology.

In support of the idea that insecure attachment contributes to psychopathology, longitudinal study by Safford et al. (2004) found that both the anxious and avoidant dimensions of insecure attachment were associated with increases in depressive symptomology over time, when controlling for initial levels of symptomology. This finding in particular—that both dimensions of insecure attachment were associated with depression—is in contrast to previous findings that suggested only attachment anxiety contributes to depression (e.g., Bifulco et al., 2002; Priel & Shamai, 1995). These inconsistent findings suggest that additional research on the issue is needed.

### **Anxiety.**

As opposed to the ambiguous relationship between attachment avoidance and depression, research suggests that both dimensions of insecure attachment are related to anxiety—particularly to cognitive vulnerabilities to anxiety. One of these vulnerabilities is the looming maladaptive schema (Williams & Riskind, 2004). This schema is conceptualized as a “danger” schema that makes it more likely for individuals to interpret ambiguous stimuli as threatening or dangerous (Riskind & Williams, 2006). This particular cognitive style broadly influences worry and avoidance, as well as other compensatory behaviors (Riskind, Williams, & Joiner, 2006).

### **Linking Attachment Style to Emotion Regulation**

Importantly, it is hypothesized that rather than attachment style having a direct effect on mental health, it influences mental health due to its influence on emotion regulation, cognition, and various other mechanisms (Wei et al., 2011). While securely attached individuals tend to manage stress and negative affect by acknowledging it, expressing it, and coping with it (Mikulincer & Florian, 1998), people who have high levels of attachment anxiety may manage stress by exaggerating the level of threat it poses, reacting to it with strong emotional responses (Lopez, Mauricio, Formley, Simko, & Berger, 2001), and excessively requiring the reassurance of others.' On the other hand, individuals who demonstrate attachment avoidance may attempt to manage negative affect by inhibiting the display of emotions, denying their experience of negative affect, and protecting themselves against potential rejection by others. In general, insecurely attached adults rely on emotion-regulation mechanisms that are often ineffective and paradoxically increase psychological distress (Kobak & Sceery, 1988; Lopez et al., 2001; Mallinckrodt, 2001; Mikulincer & Florian, 1998). See the above sections *Affect Regulation* and *Emotion Regulation* for a review.

### **Linking Emotion Regulation to Mental Health**

The link between habitual use of maladaptive emotion regulation strategies and mental health has garnered an extensive amount of attention. Emotion regulation has become relevant due to its relationship with general psychological distress, as well as its proven explanatory role in over half the DSM-IV Axis I diagnoses and all Axis II diagnoses (Gross & Levenson, 1997). In an effort to address vulnerabilities to depression, anxiety, and other forms of distress, it is important to consider the types of emotion regulation that may prove beneficial and/or detrimental to mental health.

#### **Experiential avoidance and mental health.**

Research has revealed that experiential avoidance is positively associated psychological distress in general (Hayes et al., 2004). This is likely because private,

internal events are often unresponsive or even paradoxically increased by deliberate control efforts. Further, sometimes difficult emotions are experientially important and healthy behavioral changes often initially produce psychological discomfort (Hayes et al., 1996). More specifically, EA has been shown to be associated with higher levels of psychopathology across the board and may be a common factor that underlies a wide range of seemingly diverse types of psychopathology (Hayes et al., 2004; Chawla & Ostafin, 2007; Hayes, Wilson, Gifford, Folette, & Stosahl, 1996). The relationship between experiential avoidance and wellbeing has also been established. Experiential avoidance has been thought to increase feelings of emptiness and inauthenticity and decrease feelings of life satisfaction and connectedness, and it has been shown as related to a lower quality of life (Hayes et al., 2004).

To understand the importance of EA in relation to various forms of psychopathology, it must first be noted that the broad conceptualization of EA emphasizes the importance of *function over form*. That is, although many maladaptive behaviors may seem different topographically, when examined contextually, they can be recognized as serving the same function—the avoidance of distress (Barlow, Allen, & Choate, 2004; Hayes et al., 1996). This results in coverage of a great number of diverse behaviors associated with psychiatric disorders—like avoiding places, conversations, or thoughts that remind someone of a traumatic event, drinking alcohol to avoid unpleasant memories or emotions, or parasuicidal behavior to reduce high emotional arousal (Chmielewski, Kotov, Ruggero, & Watson, 2011). Furthermore, EA is particularly strongly correlated with depression, stress, anxiety, and general psychological distress (Boulanger, Hayes, & Pistorello, 2010).

Experiential avoidance also has implications for nonclinical populations as it has shown to be related to less frequent positive events and diminished positive affect, life satisfaction, and meaning in life as well as a sense of inauthenticity or disconnection from self (Kashdan, Barrios, Forsyth, & Steger, 2006). Studies also show a correlation between

EA and an increase in anxiety symptomology in healthy, non-disordered individuals, suggesting that experiential avoidance is a psychological vulnerability for, not merely a correlate or consequence of, psychopathology (Boulanger, Hayes, & Pistorello, 2010).

### **Hyperactivating approaches and mental health.**

Within the emotion regulation literature, rumination has been described as “a pervasive focus on thoughts and feelings associated with an emotion-eliciting event” (Gross, 2010, p.503). Rumination has been well established as both a cause and consequence of depression and anxiety, as evidenced by numerous studies. Rumination has been shown to prospectively predict depression (Nolen-Hoeksema, 2000; Spasojevic & Alloy 2001) and to be related to the development of anxiety and depression (Nolen-Hoeksema, 2000). Multiple studies have found that rumination is also linked to longer and more severe depression, delayed recovery from depression, and increases in suicidal ideation (see Lyubomirsky et al., 2003 for a review). Further evidence comes from Conway et al. (2000), which showed that rumination on sadness in particular was correlated with depression and predicted levels of negative affect after a sad mood induction. Lastly, rumination was shown to moderate the relationship of cognitive vulnerability to depression and onset, number, and duration of depressive episodes (Robinson & Alloy, 2003).

### **Perspective-taking approaches and mental health.**

While perspective-taking approaches to emotion regulation is a relatively new area of study, preliminary evidence suggests that these strategies are positively associated with mental health. Gross & John (2003) showed that reappraisal is a more helpful emotion regulation strategy than suppression when used habitually, and reappraisal has been shown to lead to decreased levels of negative emotional experience and increased positive emotional experience (Gross & Thompson, 2007 (see section on *reappraisal* for a review)).



Another hypothesized facet of perspective-taking approaches, big picture appraisal, has also been shown as inversely associated with negative affect and neuroticism, as well as positively associated with positive affect (Haner & Rude, 2015; Rude, Miller, & Haner, 2015). Experimental evidence comes from Baum and Rude (2013), which showed that those writing about adverse experiences with attention to the universality and normality of adversity of distress experiences lower depression symptoms than a control group at one- and six-month follow-up assessments, although this benefit was limited to participants without elevated depression at the beginning of the study. Experimental evidence also comes from Miller, Rude, & Haner (2015), where an implicit induction of big picture thinking was used (participants read multiple vignettes concluding with a big picture interpretation without being encouraged explicitly to think differently) and it was found that big picture thinking increased and generalized to new situations and decreased emotional reactivity after a failure experience. Several other researchers have shown the benefits of taking a broadened perspective, including experiencing less distress and lower levels of self-reported negative emotion (see section on *linking big picture appraisal to outcomes* for a review).

Conceptually, it is thought that cognitive flexibility is a necessary component of perspective-taking approaches. Cognitive flexibility has been shown as inversely related to depression (Dennis & Wal, 2010), and this finding is rooted in theory that rigid cognitive styles may characteristic of depression may reinforce the depressed state by creating a bias toward the automatic acceptance of maladaptive beliefs (Moore 1996; Teasdale et al., 1995). Further, a study by Palm & Follette (2010) showed that cognitive flexibility was inversely associated with post-traumatic stress symptomology. Less is known about decentering and mental health, but a recent empirical validation of the Experiences Questionnaire (Fresco et al., 2006) found that the decentering subscale of the EQ was inversely related to depressive symptomology.

## **The Potential Mediating Role of Emotion Regulation in the Relationship Between Attachment and Mental Health**

In general, theoretical and empirical work suggest that attachment does not directly exert its influence upon mental health, but rather that it influences mental health due to its influence on cognitive, behavioral, and affective mechanisms (Mikulincer & Shaver, 2007; Eng, Heimberg, Hart, Schneier, & Liebowitz, 2001; Hankin, Kassel, & Abela, 2005; Ingram, 2003; Murphy & Bates, 1997; Roberts, Gotlib, & Kassel, 1996; Safford, et al., 2004; Williams & Riskind, 2004). Evidence pertaining to emotion regulation in particular as a mediating variable in the relationship between attachment style and mental health is still emerging.

Wei, Vogel, et al. (2005) conducted what is believed to be the first study aimed at examining the specific hypotheses that 1) the association between attachment anxiety and negative affect is mediated by hyperactivating strategies and 2) the association between attachment avoidance and negative affect is mediated by deactivating strategies. They found that the relationship between attachment avoidance and negative affect (i.e., depression and anxiety) was mediated by deactivating strategies, and that the relationship between attachment anxiety and negative affect (i.e., anxiety and depression) was mediated by hyperactivating strategies. A more recent systematic review of emotion regulation as a mediator between attachment and depression by Malik, Wells, & Wittkowski (2015) did not consistently find suppression (a deactivating strategy) as a mediator of the relationship between attachment avoidance and distress, but the review did find strong evidence in support of hyperactivating strategies as a mediating variable between attachment style and depression. Other studies have also been subject to unexpected findings; for instance, a study by Karreman and Vingerhoets (2012) found that attachment avoidance styles were associated with greater wellbeing than attachment anxiety styles, and that higher reappraisal mediated this relationship for secure and attachment avoidance types, but suppression failed to function as a mediator at all.

Palm and Follette (2011), while not looking at attachment style directly but rather a population of individuals who had been interpersonally victimized, found that experiential avoidance (i.e., a deactivating strategy) and cognitive flexibility (i.e., a perspective-taking approach), mediated the relationship between interpersonal victimization and amount of psychological distress experienced. While this evidence does not directly support the idea that experiential avoidance and cognitive flexibility may mediate the relationship between attachment and distress, it is suggestive of the role of these strategies as mediators between vulnerable populations and psychological distress.

While the importance of hyperactivating versus deactivating strategies as mediators between attachment style and mental health has been established, the findings have been mixed and pathways between attachment avoidance and mental health in particular have not been clearly delineated. This study seeks to explore the roles of three unique approaches to emotion regulation that may in part explain the relationships between the various attachment styles and mental health variables. Some evidence exists that rumination is a mediator between attachment anxiety and distress, and this study seems to replicate that finding. Experiential avoidance, which appears conceptually related to deactivating strategies, will be explored as a potential mediator in the relationship between attachment avoidance and lack of wellbeing. Finally, a new and important area of research and a primary goal of the study is investigating the potential mediating role of perspective-taking approaches in the relationships between attachment styles and mental health variables.

### **Chapter 3: Methodology**

The aim of the current study was to reveal the emotion regulation mechanisms by which internalized models of attachment exert their influence on adults' mental health. It was expected that attachment anxiety would be related to distress and that this relationship would be mediated by both rumination and inversely by perspective-taking approaches. It was also expected that attachment avoidance would be inversely related to wellbeing and that this relationship would be mediated by both experiential avoidance and inversely by perspective-taking approaches. Using survey data from a sample of college students, structural equation modeling techniques (SEM) were used to examine the relationships between attachment styles, the use of various approaches to emotion regulation (i.e., perspective taking; hyper-activating; deactivating), and mental health variables (i.e., distress; wellbeing). Figure 1 depicts the proposed structural model. Further, because the study of perspective-taking and reappraisal approaches to emotion regulation is a relatively new area, this study sought to deepen understanding of this set of related constructs by exploring the structure and interrelationships of several different measures of perspective-taking.

#### **Formation of Latent Variables**

Latent variables were created to represent each of the study constructs. The creation of latent variables allowed for a large number of observed variables to be grouped together to represent a hypothetical, underlying construct. Latent variable analysis, which is akin to confirmatory factor analysis, allows researchers to better account for the individual contribution of each construct being measured, as well as to more precisely model measurement error (Bollen, 1989).

#### **Attachment style.**

For the purposes of this study, the two dimensions of attachment styles— attachment anxiety and attachment avoidance— were initially proposed as latent variables and measured using the Experiences in Close Relationships Scale (ECR-R).

**Emotion regulation: perspective-taking approaches.**

Five separate measures of perspective taking strategies were identified to potentially comprise the latent factor: Big Picture Appraisal Questionnaire (BPAQ), Scrambled Sentences Test for Big Picture Appraisal (SST-BPA), Emotion Regulation Questionnaire- Reappraisal subscale (ERQ-R), Experiences Questionnaire (EQ), and the Cognitive Flexibility Scale (CFS). These particular measures were identified because a) they appear to be conceptually similar to one another but potentially still uniquely contributing to the underlying factor and b) empirical evidence is supportive of associations between the first three measures (Haner & Rude, 2015; Miller, Rude, & Haner, 2015).

**Emotion regulation: deactivating approaches.**

The Multidimensional Experiential Avoidance Questionnaire (MEAQ) was be used to assess EA, and EA will be treated as a hypothetical, overarching construct comprised of the following subscales that assess its unique facets: behavioral avoidance, distress aversion, repression/denial, distraction/suppression, procrastination, and distress endurance. All subscales have been shown to be moderately correlated with one another, but not so much so as to be tapping into the same construct. This made the measure ideal for latent variable modeling.

**Emotion regulation: hyperactivating approaches.**

The rumination subscale of the Response Styles Questionnaire (RSQ-R) and the rumination subscale of the Experiences Questionnaire (EQ) was used to measure hyper-activating approaches (i.e., rumination).

**Mental health: psychological distress and wellbeing.**

It was thought that psychological distress and wellbeing would comprise two latent factors that may be more meaningful and interpretable than an array of separate measures. The Mental Health Inventory (MHI) was used to assess the latent constructs of psychological distress and wellbeing, and its psychometric properties suggest that 1) these two constructs are related but indeed separate, and 2) that five correlated lower-order factors consisting of anxiety, depression, loss of behavioral emotional control, general positive affect, and emotional ties exist, with the former three being lower-order factors of distress and the latter two of wellbeing.

### **Research Questions**

This study explored the relationships among the constructs of attachment style, emotion regulation, and mental health, and examined the role of several emotion regulation strategies in mediating the relationship between attachment style and mental health as depicted in Figure 1. In the tradition of adult attachment research, attachment styles are not treated as categorical variables but rather as dimensions that an individual can be high or low on: High levels of either attachment anxiety or avoidance are interpreted as insecure attachment styles and, similarly, low levels of either attachment anxiety or avoidance are interpreted as secure attachment styles. The following specific research questions and predictions are explored:

1. How is attachment style related to mental health variables (i.e., psychological distress, wellbeing)?

a) Attachment anxiety is expected to be positively associated with psychological distress and weakly inversely associated with wellbeing.

Rationale: That attachment anxiety is associated with increased symptoms of psychological distress and diminished wellbeing is well established in the literature and it is expected that these findings will be replicated (see Mikulincer & Shaver, 2007 for a review). The positive association with distress is based on to the nature of attachment

anxiety itself, such that an individual high on anxious attachment is chronically hypervigilant to attachment-related threats, resulting in heightened levels of distress.

That the relationship with wellbeing was expected to be weak was based on evidence that distress and wellbeing are related but distinct constructs (Veit & Ware, 1983). One may experience heightened levels of distress in the context of interpersonal relationships yet still obtain fulfillment from hobbies and/or work life. Thus, it was thought that wellbeing would not be as impacted by attachment anxiety as would levels of distress.

b) Attachment avoidance is expected to be inversely associated with wellbeing, and weakly associated with psychological distress.

Rationale: Some studies show that attachment avoidance is related to depressive symptomology (e.g., Bifulco, Moran, Ball, & Bernazzani, 2002; Priel & Shamai, 1995), while some do not (e.g., Safford, Alloy, Crossfield, Morocco, & Wang, 2004). Further, some studies have shown that while attachment avoidance isn't related to distress, it is associated with low levels of wellbeing (Kafetsios & Sideridis, 2006; Lavy & Littman-Ovadia, 2011; Wei et al., 2011). Since a tenet of attachment avoidance is the drive to decrease contact with distress, it was expected that this particular association would be weak. On the other hand, it's likely that fulfilling aspects of life are diminished in the pursuit of avoiding negative emotions (i.e., close relationships) and as such, this relationship was expected to be stronger.

## 2. How is attachment style related to emotion regulation strategies?

a) Attachment anxiety was expected to be positively associated with hyperactivating strategies (i.e., rumination) and inversely associated with perspective taking.

Rationale: Theoretical work posits that attachment anxiety is associated with the use of hyperactivating strategies (see Mikulincer, Shaver, & Pereg, 2003 for a review).

Empirical evidence for this relationship exists and is particularly strong for measures of rumination (Garrison, Hahn, Miller, & Sauer, 2014; Mikulincer & Shaver, 2007; Saffrey & Ehrenberg, 2007). It is anticipated that this finding will be replicated.

Individuals who are low on attachment anxiety are thought to manage emotions in a variety of adaptive ways, many of which center on psychological flexibility and in that way are similar to perspective taking. For instance, Waters (1999) suggested that individuals low on attachment anxiety are likely able to flexibly modify their approach to emotion regulation based on the environmental demands of a particular situation. Further evidence comes from Mikulincer & Shaver (2007), who suggested that individuals who are low on attachment anxiety are likely to engage in flexible approaches to problem solving as well as in reappraisal. Thus, it was expected that attachment anxiety will be inversely associated with perspective-taking.

b) Attachment avoidance is expected to be positively associated with deactivating strategies (i.e., experiential avoidance) and inversely associated with perspective taking.

Rationale: An extensive body of theoretical work supports the idea that attachment avoidance is associated with the use of deactivating/suppressive emotion regulation strategies (see Mikulincer, Shaver, & Pereg, 2003 for a review). While experiential avoidance is a relatively new construct, it conceptually appears to function as a way of down-regulating negative emotions, at least in the short term, and so it is expected that attachment avoidance will be positively associated with EA.

Much like hypothesis 2a, individuals who are low on attachment avoidance have also been shown to utilize adaptive emotion regulation strategies that are similar to perspective taking, such as reappraising the meaning of distressing situations and being cognitively flexibly in their application of emotion regulation strategies (Mikulincer & Shaver, 2007). As such, it was expected that attachment avoidance would be inversely associated with perspective-taking as well.



3. How are emotion regulation strategies related to mental health variables (psychological distress and wellbeing)?

a) Hyperactivating ER strategies were expected to be moderately positively associated with psychological distress and weakly inversely associated with wellbeing.

Rationale: Because extensive evidence suggests that hyperactivating strategies are positively associated with psychological distress variables, particularly in the context of rumination, depression, and anxiety (Nolen-Hoeksema, 1991; 2000), it is expected that the relationship between hyperactivating ER strategies and distress will be strong in this study.

A smaller body of empirical evidence suggests that rumination is associated with low levels of wellbeing (Harrington & Loffredo, 2010). Because relatively little is known about how rumination affects overall wellbeing, this relationship was proposed to be weak and somewhat exploratory.

b) Experiential avoidance was expected to be moderately inversely associated with wellbeing and weakly associated with psychological distress.

Rationale: While the avoidance of particular emotions, thoughts, and sensations reduces distress in the short-term, it is thought that remaining out of touch with parts of one's experience can to low levels of wellbeing (Hayes et al., 2004; Bond et al., 2011). It's also thought that EA may create a "rebound" effect," wherein suppressed or denied negative emotions inevitably express themselves despite the individual's attempts to stop the emotion process. Essentially, EA may relieve distress in the moment but could exacerbate it in the long term. Because EA has demonstrated a somewhat convoluted association with distress, this analysis was exploratory and it was anticipated that this complex relationship would be weak.

The relationship with wellbeing, on the other hand, was thought to be strong. Theoretical and empirical work have suggested that when one chronically denies the experience of negative emotions, they consequently dull the experience of positive

emotions as well, which are thought to be an integral component to overall wellbeing (Nezlek & Kuppens, 2008). Lastly, experiential avoidance is conceptualized as a multifaceted construct: In addition to the denial of negative emotions, individuals high on EA are likely to avoid any experience that could lead to emotional pain—including close relationships and the pursuit of meaningful goals, two other important facets of wellbeing (Hayes et al., 1996; Hayes et al., 2004).

c) Perspective-taking approaches were expected to be positively associated with wellbeing and inversely associated with psychological distress.

Rationale: Conceptually, perspective-taking approaches to emotion regulation have been thought of as adaptive and beneficial, in that their use may lead to overall lower levels of negative emotion and distress. Preliminary empirical evidence exists in support of this claim—big picture appraisal has been shown as inversely associated with negative affect and neuroticism, as well as positively associated with positive affect (Haner & Rude, 2015; Rude, Miller, & Haner, 2015). Another facet of perspective taking approaches, reappraisal, has been shown to lead to decreased levels of negative emotion experience and increased positive emotion experience (Gross & Thompson, 2007). Decentering has been shown as inversely related to depressive symptomology (Fresco et al., 2006), as has cognitive flexibility (Dennis & Wal, 2010).

4. Does emotion regulation mediate the relationship between attachment style and mental health variables? Several specific mediation relationships were proposed:

a) Hyperactivating ER strategies were expected to mediate the relationship between attachment anxiety and distress.

Rationale: A study by Wei et al. (2005) found that the relationship between attachment anxiety and psychological distress (i.e., depression and anxiety) was mediated by hyperactivating approaches to affect-regulation. Because rumination is considered a

hyper-activating approach to ER, in that it increases the intensity and duration of negative affect, it is expected that these findings will be replicated.

b) Deactivating ER strategies were expected to mediate the relationship between attachment avoidance and wellbeing.

Rationale: Theoretical work suggests the inverse relationship between attachment avoidance and wellbeing may be via the association between attachment avoidance and deactivating ER strategies, like experiential avoidance, which has been thought to increase feelings of emptiness and inauthenticity and decrease feelings of life satisfaction and connectedness (Hayes et al., 2004). It is expected that these hypotheses will be supported in this study.

c) Perspective taking was expected to mediate the relationship between attachment anxiety and distress.

Rationale: It has been shown that the relative absence of attachment anxiety is associated with more adaptive ways of problem solving and regulating emotions, resulting in low levels of distress (see Mikulincer & Shaver, 2007 for a review). Perspective-taking approaches may be one of these adaptive strategies that has yet to be examined in this manner, as emotion regulation styles like big picture appraisal have been shown to be associated with low levels of negative affect (Haner & Rude, 2015). This is likely due to the way in which perspective taking allows for an individual to consider multiple, alternative viewpoints when confronted with difficult situations. For instance, rather than accepting the first explanation of a failure that comes to mind (i.e., “I’m not good enough”), one may also consider that to fail is human and inevitable and in turn somewhat mitigate their distress.

d) Perspective taking was expected to mediate the relationship between attachment avoidance and wellbeing.

Rationale: Similarly, it has been shown that the relative absence of attachment avoidance is associated with more adaptive ways of problem solving and regulating

emotions, resulting in higher levels of wellbeing (see Mikulincer & Shaver, 2007 for a review). Perspective-taking approaches may be one of these adaptive strategies that has yet to be examined, as constructs like big picture appraisal are thought to be associated with high levels of positive affect and an overall high quality of life. See hypothesis 4c for a rationale.

5. An individual's current degree of life stressors was expected to moderate the relationship between attachment style, emotion regulation, and psychological distress, such that the mediation is stronger under conditions of high life stress.

Rationale: According to Bowlby (1973, 1969/1982), the attachment system is “activated” by particular environmental threats—meaning that the attachment system—including the emotion-regulation strategies associated with particular attachment styles—is not always “online” and dictating cognitions and emotions, but rather becomes engaged under conditions of stress. Conceptually, this framework lends itself to the hypothesis that the mediating role of emotion regulation in the relationship between attachment style and mental health variables will be stronger under conditions of high life stress.

## **Participants**

Six hundred and two undergraduate students (50% women) enrolled in an upper-division educational psychology course completed a battery of anonymous questionnaires about “Ways of Coping” in exchange for course credit. Demographics for participants are presented in Table 1. Participants were not excluded based on any demographic variables. The sample is comprised of individuals from a multiple racial and ethnic backgrounds and various socioeconomic statuses. However, it is important to acknowledge that 46% of all participants are of Caucasian/ European-American background and 78% of all participants consider themselves to be from middle- or upper-middle class backgrounds. Table 2 presents participants' perceived SES (i.e., subjective

interpretation based on money, education, and jobs). Of note, 88% of participants rated themselves at a “5” or above, with “1” being the “worst off” and “10” being the “best off.”

## **Procedure**

Participants were informed of the purpose of the study, and consent was obtained. Data collection occurred over the course of one session. A series of self-report measures, as well as one cognitive processing measure, were administered in an online survey. The survey took approximately 30 to 45 minutes to complete.

## **Measures**

In addition to demographic questions assessing participants’ gender, race, ethnicity, relationship status, the following measures were administered. When applicable, measures are clustered into those expected to form a latent factor.

### **Measure of perceived socioeconomic status.**

*The MacArthur Scale of Subjective Social Status.* The MacArthur Scale of Subjective Social Status questionnaire is a measure of perceived socioeconomic status that aims to capture individuals’ “sense of their place in the social ladder which takes into account standing on multiple dimensions of socioeconomic status and social position” (Adler & Stewart, 2007). Participants were asked to indicate their perceived socioeconomic status on a ten-point scale. Participants read the following instructions: “The highest number (10) represents the people who are the best off, those who have the most money, most education, and best jobs. At the bottom (1) are the people who are the worst off, those who have the least money, least education, and worst jobs or no job. Please indicate the number that best reflects your situation.”

### **Measure of attachment style.**

*Experiences in Close Relationships- Revised (ECR-R) Adult Attachment Questionnaire.* The Experiences in Close Relationships- Revised (ECR-R; Fraley, Waller, & Brennan, 2000) questionnaire is a revised version of Brennan, Clark, and

Shaver's (1998) Experiences in Close Relationships (ECR) questionnaire. The items on the ECR-R were selected using Item Response Theory, but were selected from the same item pool as those from the original ECR. The measure is designed to assess individual differences with respect to attachment-related anxiety (i.e., the extent to which people are insecure vs. secure about the availability and responsiveness of romantic partners) and attachment-related avoidance (i.e., the extent to which people are uncomfortable being close to others vs. secure depending on others). The 18-item anxiety subscale consists of items such as "I'm afraid that I will lose my partner's love" and "I worry a lot about my relationships." The 18-item avoidance subscale consists of items such as "I prefer not to be too close to romantic partners," and "It helps to turn to my partner in times of need." Totals are computed by averaging the scores for all items within each scale, with higher scores representing higher an increased level of the corresponding construct. Internal consistency reliability tends to be .90 or higher for the two ECR-R scales.

#### **Measures of perspective taking approaches.**

*Reappraisal Subscale of the Emotion Regulation Questionnaire (ERQ).* The Emotion Regulation Questionnaire (ERQ) was created to assess suppression and reappraisal (Gross & John, 2003). The 6 reappraisal subscale includes items such as, "I control my emotions by changing the way I think about the situation I am in." Items that are answered using a 7-point Likert scale, on which ranges from strongly disagree to strongly agree. Gross and John (2003) report that the reappraisal subscale has a Cronbach's alpha of .79 and demonstrates satisfactory convergent and discriminate validity (Gross & John, 2003).

*Big Picture Appraisal Questionnaire (BPAQ).* The instructions ask respondents to think back to situations in which they have been upset or unhappy and to characterize the way they usually respond in such situations by rating each of the 23 items on a 5-point scale, ranging from "never" to "very frequently." Items are included tapping each of the three dimensions reported here (e.g., extended time perspective: "I remind myself that if I

wait it out I will eventually feel better;” broader context of life and self: “I realize that this is only part of who I am;” and broader human context: “I know that others experience feelings like mine.”). In several samples, the BPQ has shown good internal consistency and convergent- discriminant validity (Gill et al., 2016).

*Scrambled Sentences Test for Big Picture Appraisal (SST-BPA).* This measure of Big Picture Appraisal was modeled after an established measure of depressive cognitive biases, the SST (Rude, Durham-Fowler, Baum, Rooney, & Maestas, 2010; Wenzlaff, 1988, 1993; Wenzlaff, Rude, Taylor, Stultz, & Sweat, 2001). As in the original SST, items developed for the SST-BPA were groups of 6 words (e.g., “temporary is bad think pain I”) that respondents unscramble by placing numbers above each word to reflect the chosen word ordering (e.g., “I think pain is temporary” or “I think pain is bad”). Items (e.g., “me every like no feels person”) were constructed to allow formation of sentences judged consistent with BPA (e.g., “Every person feels like me”) or inconsistent with BPA (e.g., “No person feels like me”). Across several studies, the SST-BPA has shown good internal consistency and convergent-discriminant validity (Haner, Rude, Miller, 2015).

*Experiences Questionnaire- Decentering Subscale (EQ-D).* The Experiences Questionnaire is a self-report inventory that was designed to measure decentering and rumination (Fresco et al., 2007). The measure consists of 20-items comprising two subscales, decentering and rumination, and examples of items are “I am better able to accept myself as I am,” (decentering) and, “I think over and over again about what others have said to me,” (rumination) with high scores representing an increased level of the corresponding construct. Internal consistencies for the decentering and rumination subscales are high ( $r = .81$ , respectively) (Fresco et al., 2007).

*Cognitive Flexibility Inventory.* The CFI is a 20-item scale developed to measure the cognitive flexibility necessary to successfully modulate maladaptive beliefs and generate adaptive thinking (Dennis & Wal, 2010). A 7-point Likert scale was used (1 = strongly disagree, 7 = strongly agree), with higher scores indicative of greater

cognitive flexibility, and lower scores indicative of less cognitive flexibility. Two factors were indicated in the CFI: Control (i.e., tendency to perceive difficult situations as controllable), which had a Cronbach's alpha of .85 and Alternatives (i.e., the ability to perceive multiple alternative explanations for life occurrences, human behavior), which had a Cronbach's alpha of .91. Examples of items include "I often look at a situation from different viewpoints" (alternatives) and "I feel I have no power to change things in difficult situations" (control).

### **Measures of hyperactivating strategies.**

*Ruminative Response Scale (RRS).* The Ruminative Response Scale (RRS) is a subscale of the Response Style Questionnaire (RSQ; Nolen-Hoeksema & Morrow, 1991). It is a 22-item self-report inventory that examines responses to a depressed mood, with items focused on the self, symptoms, or consequences of the mood. For example, items include "Think about how alone you feel" and "Analyze recent events to try to understand why I am depressed," with answer choices ranging from "almost never" to "almost always," with high scores representing increased use of rumination. It has been shown to have good internal consistency, with a Cronbach's alpha of .89.

*Experiences Questionnaire- Rumination subscale (EQ-R).* Described in the above section.

### **Measures of deactivating strategies.**

*The Multidimensional Experiential Avoidance Questionnaire (MEAQ).* The MEAQ (Gámez, Chmielewski, Kotov, Ruggero, & Watson, 2011) is a 62-item measure of experiential avoidance that comprises six subscales: *Behavioral Avoidance*, defined as situational avoidance of physical discomfort and distress (e.g., "I won't do something if I think it will make me uncomfortable"); *Distress Aversion*, defined as non-acceptance of or negative attitudes toward distress (e.g., Happiness means never feeling any pain or discomfort"); *Procrastination*, defined as delaying activities that may cause distress (e.g., I tend to put off unpleasant things that need to get done"); *Distraction / Suppression*,



defined as attempts to ignore or suppress distress (e.g., When something upsetting comes up, I try very hard to stop thinking about it”); *Repression/Denial*, defined as distancing and dissociating from distress (e.g., I sometimes have difficulty identifying how I feel); and *Distress Endurance*, defined as a willingness to engage in behavior that is consistent with one’s values even when in distress (e.g., People should face their fears). Items are rated on a 6-point scale ranging from 1 (strongly disagree) to 6 (strongly agree). The subscales show evidence of good internal consistency, and the total score is both (a) associated with related measures of avoidance and (b) distinguishable from negative emotionality.

### **Measure of mental health.**

*Mental Health Inventory (MHI)*. The MHI (Veit & Ware, 1983) is a 38-item measure assessing mental health, as broken down into the two categories of psychological distress and psychological wellbeing. The structure of the MHI was initially identified by a factor analysis, and psychological distress was divided into three factors: anxiety (very nervous person, tense or high strung), depression (moody, low spirits), and loss of behavioral and emotional control (concern about losing control of mind, felt emotionally stable). Psychological wellbeing was divided into two factors: general positive affect (happy person, relaxed and free of tension) and emotional ties (felt loved and wanted, time felt lonely). Patients were instructed to indicate how they have been feeling in the past month on a 5- or 6-point Likert scale. Internal consistency estimates for each of the subscales range from .92 to .96, and test-retest reliability is good with stability coefficients ranging from .56 to .64.

### **Measure of life stress.**

*The Social Readjustment Rating Scale – Modified for College Students (SRRS)*. The Social Readjustment Rating Scale (Holmes & Rahe, 1967) is a widely utilized measure of stressful life events in adults that has been modified for use in a population of college students. Participants are asked to check a box next to each event they have

experienced in the past year. The possible 32 events range from “death of a close family member, with a mean value of 100, and the latter being ranked as least stressful, with a mean value of 20. Values are summed for a total score that results in a classification of mild stress (total <150), and severe stress (total >300).

## **Analytic Approach**

### **Primary model.**

Structural equation modeling (SEM) techniques were conducted using IBM SPSS version 22 and Mplus version 8 software (Muthén & Muthén, 2012) in order to test relationships among the study constructs. Maximum likelihood (ML), a robust and commonly used estimation, was used throughout analyses (Harris and Stocker, p. 828, 1998).

SEM contains two main components: a measurement model and a structural model (i.e., path model) (Crowley & Fan, 1997; Weston & Gore, 2006). The measurement model explains the “relationships between observed variables and the construct or constructs those variables are hypothesized to measure.” The structural model refers to the paths among all proposed constructs (p. 724). Taken together, the measurement model and structural model constitute the full structural model.

Six steps outlined by Weston and Gore (2006) were followed in order to test the model using an SEM approach: model specification, identification, estimation, evaluation, and respecification. Following the two-step approach to modeling detailed by Anderson and Gerbing (1988), each step was performed for measurement part of the model prior to being performed on the structural model. When respecification to each part of the model was necessary, the last three steps were repeated until an acceptable model was found.

In the first step, *model specification*, the hypothesized relationships between latent variables and their indicators (i.e., the measurement model) were determined. Following this, the hypothesized paths between variables of interest (i.e., the structural model) were

determined. In step two, *model identification* was evaluated to determine how many free parameters (i.e., unknowns) and how many observations (i.e., knowns) were in each part of the model. A model is considered under-identified if there are more free parameters than observations, just-identified if there are an equal number of free parameters and observations, and over-identified if there are more observations than free parameters. Both parts of the model were over-identified, making it possible for model fit and parameter estimates to be evaluated (Kline, 2016, p.119).

Steps three and four, *model estimation* (i.e., running the analyses) and *model evaluation* (i.e., determining whether the model fits the data well) naturally occurred somewhat simultaneously. Due to poor initial model fit and multiple low factor loadings, the measurement model was *respecified* (i.e., indicators that did not load on to their respective factors were dropped). The measurement model was then re-estimated, re-evaluated, and found to be acceptable. Once an acceptable measurement model was identified, a parallel process was applied to the structural part of the model (with modifications to its measurement part), as it also initially demonstrated unsatisfactory model fit. Of note, it is standard for respecification to either part of the model to be based on both theory- and data-driven conclusions.

### **Evaluating and Comparing Models.**

Model fit was evaluated based on 1) factor inter-correlations, 2) direction and magnitude of the parameter estimates, and 3) global fit indices (Root Mean Square Error of Approximation [RMSEA], Comparative Fit Index [CFI]). Standards for fit indices cutoffs were based on Hu and Bentler (1998) and Kline (2004) and are as follows: RMSEA <.08, CFI > .90. The CFI value can range from 0 to 1, and Hu and Bentler (1995) suggest that CFI values above .95 are optimal, while Kline (2004) later added that values above .90 are acceptable. The RMSEA also has values that range from 0 to 1. Hu and Bentler (1998) state that values lower than .06 are ideal but later (1999) added that values up to .08 are adequate. Of note, the chi-square test of model fit that is commonly

evaluated alongside CFI and RMSEA to determine model fit was not considered in this study due to its unreliability in measuring model fit for sample sizes above ~200. This is because as sample size increases, so does the likelihood of a significant chi-square value, indicating the model does not fit the data well (Barrett, 2007).

As anticipated in latent factor modeling, multiple competing models emerged during analysis. For example, when an initial model was estimated and found to have poor model fit during evaluation, it was then respecified to include additional parameters (e.g., a path between an independent variable and a mediating variable). Additional parameters were considered if they were suggested both by empirical tests of misspecification (i.e., modification indices) provided by Mplus and were theoretically meaningful.

Following SEM best practices, these “competing” models were compared to one another by evaluating both global fit indices and chi-square difference tests (not sensitive to sample size). The chi-square difference test assumes there is no significant difference between the models. Thus, if the chi-square difference test was significant, the null hypothesis was rejected and the model was respecified to include the additional parameter(s). Importantly, chi-square difference tests were only performed on “nested” models (i.e., model A is nested in Model B if the parameters in Model A are a subset of the parameters in Model B).

### **Multiple Group Analysis.**

Multiple Group Analysis (MGA) was utilized in order to test for the moderating effect of life stress on all proposed mediations (see section titled, *Research Questions and Hypotheses*). MGA allows for testing whether modeled relationships differ by group, and in this study, the groups examined were “high stress” and “low stress.” The life stress variable was initially continuous; However, it was artificially dichotomized for the purposes of analysis because there was not enough power (i.e., not enough participants in the study) to test for moderated mediation with a continuous moderator and latent

mediators. The “high stress” group consisted of the top 25% of scores and the “low stress” group consisted of the bottom 75% of scores.

First, the fully unconstrained model was run (i.e., all paths were free to vary by group). Next, all paths were constrained to be equal across group and all ten mediation paths were tested individually so that it would be clear which mediations differed significantly between groups. If the Wald Test of Parameter Constraints was significant for any path, standardized indirect effect values were examined for each group to determine whether the mediation was stronger for the “high stress” or “low stress” group. Of note, a conservative  $p$  value of .005 was used to determine whether the Wald Test was significant. Since ten individual paths were being tested, it was necessary to adjust for pairwise error and thus the standard value of .05 was divided by ten.

## **Chapter 4: Results**

### **Data Screening and Cleaning**

All data screening and analysis procedures were conducted using IBM SPSS Statistics Version 22. Seven hundred and ninety-five participants began the survey. However, data were only usable for 602 participants. The 193 cases that were not downloaded were either incomplete (i.e., the response pattern revealed the participant failed to complete the survey) or were duplicate cases. Data were then checked for validity: Two questions were included that assessed for validity (i.e., How honestly and accurately did you respond to the questions; How carefully and thoughtfully did you respond to the questions). Participants ( $n=15$ ) who responded “not at all” in response to either item were eliminated from the dataset. Next, the data were checked for any missing values. Because the survey required participants to answer one question before advancing to the next, missing values were only present in the items assessing relationship status and honesty and accuracy. This was due to the items erroneously not forcing a response. Participants who did not respond to relationship status but otherwise completed the survey were retained in the dataset. Two participants did not respond to the items assessing for honesty and accuracy in responding, and because it was impossible to determine the validity of their responses, their data were eliminated.

The 585 cases retained for analysis were then checked for non-normality, as SEM assumes data are normally distributed. Histograms, QQ plots, and skewness and kurtosis values were examined for all measures used as indicators in the model. In some instances, like for the BPAQ, these were total scale scores. In other instances, these were total subscale scores, as in the case of the six subscales of the MEAQ. All were found to be normally distributed.

Scale reliability analyses were then conducted for each questionnaire total score or subscale score that was planned for use in the model. All measures were found to be reliable with a Cronbach’s alpha of .8 or above with one exception: A subscale of the

measure of “wellbeing,” called *emotional ties* ( $\alpha = .55$ ) was found to have inadequate reliability. This indicator of “wellbeing,” which appeared to measure quality of interpersonal relationships (e.g., “My relationships are full and complete”), was eliminated from the dataset. As “wellbeing” only had two indicators, this left only one indicator, *general positive affect*. Thus, “wellbeing” was modeled as a single indicator variable (i.e., observed variable). This modification had important implications for the model, as it meant that the model was no longer a fully latent model and was from then on considered to be partially latent (i.e., comprised of both multiple- and single-indicator variables).

## **Measurement Model**

### **Specification.**

The proposed measurement model consisted of seven latent variables (attachment anxiety, attachment avoidance, perspective-taking strategies, hyperactivating strategies/rumination, deactivating strategies/experiential avoidance, psychological distress, wellbeing). While each latent variable was initially proposed using multiple indicators in order to reduce measurement error, the latent variable “wellbeing” was alternatively modeled as an observed variable (see above section, *Data Screening and Cleaning*) for an explanation.

Due to poor psychometric properties of most self-report measures of adult attachment, this construct was assessed using only the ECRS. Thus, a technique called “parceling” was performed in order to create multiple indicators for the ECRS. “Parceling” consisted of first performing an exploratory factor analysis (EFA) of the 18-item attachment anxiety subscale and the 18-item attachment avoidance subscale. Three parcels, each made up of the mean of six items, were created for each factor by first examining each item’s loading onto its respective factor. Items with a range of factor loadings were selected to be grouped into a single parcel, ensuring that one parcel did not

consist of all items with the highest factor loadings or vice versa (Russel et al., 1998; Wei, Vogel, et al., 2005).

### **Identification.**

Identification of the measurement model was evaluated using the requirements described by Kenny et al. (1998), such that there were at least two indicators for each latent factor and the model was overidentified. The difference between the number of observations and parameters (i.e., degrees of freedom) was determined by first using the equation  $p = v(v+1)/2$  to determine the number of observations (i.e., the number of variances and unique covariances) in the model. The difference between the number of observations and the number of free parameters was greater than zero and thus the model was found to be overidentified (i.e., the number of observations should be greater than the number of free parameters). That the model was overidentified meant that there was more than enough information in the data to estimate all model parameters, making it possible to evaluate the model's fit to the data and ultimately support or fail to support the hypotheses.

### **Estimation.**

To estimate the measurement model, a confirmatory factor analysis (CFA) with all latent constructs was performed to determine whether the measurement model was a satisfactory fit for the data. Global fit indices and factor loadings of indicators on to appropriate latent variables were evaluated. The first attempt at model estimation revealed that the latent factors "attachment anxiety" and "attachment avoidance," both of which were created using parceling, resulted in a "not positive definite covariance matrix" and therefore the analyses could not run. The not positive definite covariance matrix likely occurred because of linear dependency among the indicator variables (i.e., parcels), such that some variables were perfectly predicted by others. These constructs were alternatively modeled as observed variables. The model was then estimated with no other modifications and demonstrated inadequate model fit ( $\chi^2=703.32$ ; CFI= .84;



RMSEA= .123, 90% CI = .115, .132). As the global fit indices were inadequate and multiple factor loadings were low (See Supplemental Table 2 for factor loadings of the proposed measurement model), this initial model was determined to be unsatisfactory and was subsequently respecified.

### **Respecification.**

After examining global fit indices and factor loadings for each indicator of the latent constructs, modifications were made to the model to improve its fit to the data. Indicators that did not demonstrate an adequate factor loading were automatically dropped from the model. The cut off point for an adequate factor loading was based on Netemeyer, Bearden, & Sharma (2003), who suggest that indicators with loadings at or below .4 should be dropped. One indicator of “hyperactivating strategies,” the Experiences Questionnaire- Rumination, displayed an inadequate factor loading of .28. Because “hyperactivating strategies” only had two indicators, dropping this indicator resulted in the latent variable being alternatively modeled as an observed variable (i.e., the total score of the Ruminative Response Scale). Two indicators of “deactivating strategies” (subscales of the Multidimensional Experiential Avoidance Questionnaire called procrastination and distress endurance) also displayed unsatisfactory factor loadings of .43 and .38, respectively. These indicators were also dropped from the factor.

Another indicator of “deactivating strategies,” distraction and suppression, had a factor loading of .52. While this loading was above the .40 cutoff suggested by Netemeyer et al. (2003), this indicator appeared to conceptually differ from the other indicators of the same latent variable. While other indicators reflected more rigid and extreme forms of experiential avoidance (“I avoid activities if there is even a small possibility of getting hurt;” “If I could magically remove all of my painful memories, I would”), this indicator seemed to reflect an emotion regulation strategy that can be used flexibly and has been shown to be adaptive in the short term (Gross, 2002) distraction (e.g., “When an upsetting memory comes up, I try to focus on something else”).

Distraction from unpleasant memories while trying to complete a task at work, for instance, is adaptive because it allows you to complete a desired task. Because of the conceptual differences from other indicators of the same factor and the relatively low factor loading, it was dropped from the model.

### **Estimation of Respecified Measurement Model.**

The respecified measurement model included three of the seven proposed latent factors. All indicators of “perspective taking” and “distress” were retained. Three indicators (behavioral avoidance; distress aversion; repression/denial) were retained for “deactivating strategies.” The other four proposed latent factors (i.e., attachment avoidance, attachment anxiety, hyperactivating strategies, wellbeing) were alternatively modeled as observed variables.

After respecifications were made, the measurement model was re-estimated re-evaluated. The respecified model demonstrated factor loadings of above .4 for all indicators as well as adequate fit ( $\chi^2=120.69.10$ ; CFI= .95; RMSEA= .08, 90% CI = .074, .093). Bivariate correlations, standard deviations, and means among retained observed variables are presented in Table 3. Final factor loadings of the indicators on the latent variables are presented in Table 5.

### **Structural Model**

Based on the two-step modeling process detailed by Anderson and Gerbing (1988), the proposed structural model used for initial analyses incorporated modifications to the measurement part. This model, Model A, is presented in Figure 1.

#### **Specification.**

Relationships among variables of interest were specified, including the hypothesized directionality of the paths and whether the relationships were expected to be positive or negative. (See the section titled, “Research Questions and Hypotheses” for a detailed rationale for the specification of the structural model).

#### **Identification.**

Model A was evaluated for identification. For purposes of determining identification, the structural part of the model is treated as a “path model,” which identifies relationships between the key model constructs. Using the same process that was used for the measurement model, the structural part was also determined to be overidentified (i.e., it had more observations than parameters).

### **Estimation.**

Once a satisfactory measurement model was obtained, the full structural model (i.e., the measurement part and the structural part) was evaluated in order to determine how well the hypothesized model fit the data. Model A did not fit the data well as evidenced by global fit indices, ( $\chi^2=530.477$ ; CFI= .874; RMSEA= .108, 90% CI = .099, .116).

### **Respecification.**

The structural model was respecified in order to improve the fit of the model to the data. First, modification indices (i.e., value estimates generated by Mplus that suggest the addition and/or subtraction of parameters to improve fit) were examined to determine whether the addition of specific parameters would improve model fit. Suggested parameters were estimated only if relationships between the variables were supported by theory. One path was added to the model along with three correlated residuals. These were added to the model one at a time and were incorporated into the respecified model if a chi-square difference test between the models was significant, as this suggested that the bigger model fit the data significantly better than the smaller model. Based on these criteria, the following modifications were made:

1. A direct path between attachment anxiety to experiential avoidance

Attachment anxiety is thought to be associated with high levels of distress in response to attachment needs not being met, and experiential avoidance functions to decrease contact with experiences, thoughts, and emotions deemed distressing. It's reasonable to think that individuals high on attachment anxiety would utilize particular

facets of experiential avoidance (e.g., “When I am hurting, I would do anything to feel better”) when the use of hyperactivating ER strategies fail to result in attachment needs being met.

2. Correlated residuals of all mediator variables (hyperactivating with deactivating; hyperactivating with perspective taking; deactivating with perspective taking).

Muthén & Muthén suggest recommend correlating the residuals of the mediators as a default approach to modeling. Their rationale is that there are likely multiple predictors not included in the model that are influencing the mediators. In an effort to account for other potential sources of variation and avoid distorted parameter estimates, all three mediator variables’ residuals were correlated.

#### **Estimation of Respecified Structural Model.**

Model B, the final modified model which incorporated the three additional parameters, was estimated and global fit indices were examined and found to be satisfactory, ( $\chi^2=331.70$ ; CFI= .927; RMSEA= .086, 90% CI = .077, .095). In addition to improved CFI and RMSEA, results of chi-square difference testing of the nested models (Model A was nested in Model B) was significant, suggesting Model B had significantly better fit to the data than Model A (See Table 4). Because adequate model fit was achieved, all parameter estimates in Model B could be interpreted.

#### **Examination of Study Hypotheses**

##### **Research Question 1: How is Adult Attachment Style Related to Mental Health Variables**

It was hypothesized that attachment anxiety and attachment avoidance would be asymmetrically related to distress and wellbeing (modeled as the single indicator variable, positive affect). Specifically, attachment anxiety was expected to be positively associated with psychological distress and weakly associated with wellbeing, and

attachment avoidance was expected to be inversely associated with wellbeing and weakly associated with psychological distress (see Figure 1).

As predicted, attachment anxiety was positively associated with distress ( $\beta = .10$ ,  $p = .003$ ). Whereas, attachment anxiety was expected to be weakly related to wellbeing, it showed no relationship to the indicator of wellbeing, positive affect ( $\beta = -.02$ ,  $p = .187$ ).

Similarly, attachment avoidance was inversely associated with positive affect ( $\beta = -.12$ ,  $p = .005$ ) as anticipated, but it was unrelated to distress ( $\beta = .02$ ,  $p = .651$ ) (See Figure 2).

### **Research Question 2: How is Adult Attachment Related to Emotion Regulation Styles**

Attachment anxiety was expected to be positively associated with hyperactivating ER strategies (modeled as the single indicator variable, rumination), while attachment avoidance was expected to be positively associated with deactivating ER strategies (i.e., experiential avoidance). Both attachment anxiety and attachment avoidance were expected to be inversely associated with perspective taking (See Figure 1).

As predicted, attachment anxiety was positively associated with hyperactivating ER strategies ( $\beta = .44$ ,  $p = .000$ ) and attachment avoidance was positively associated with deactivating ER strategies ( $\beta = .127$ ,  $p = .004$ ). As was also predicted, both attachment anxiety ( $\beta = -.170$ ,  $p = .000$ ) and attachment avoidance ( $\beta = -.200$ ,  $p = .000$ ) were inversely associated with perspective taking (See Figure 2).

Although a relationship between attachment anxiety and experiential avoidance was not initially proposed, modification indices and conceptual knowledge suggested that attachment anxiety is not only strongly associated with the hyperactivating ER strategy rumination, but also with the deactivating ER strategy, experiential avoidance. The path was estimated ( $\beta = .31$ ,  $p = .000$ ) and found to be significant.

### **Research Question 3: How are Emotion Regulation Styles Related to Mental Health**

It was hypothesized that hyperactivating ER strategies and deactivating ER strategies would be asymmetrically related to distress and wellbeing. Specifically, hyperactivating ER strategies were expected to be moderately positively associated with psychological distress while deactivating strategies were anticipated to be moderately inversely associated with wellbeing. Hyperactivating ER strategies were also expected to be weakly inversely associated with wellbeing while deactivating strategies were expected to be moderately inversely associated with wellbeing. Lastly, perspective taking was expected to be positively associated with wellbeing and inversely associated with psychological distress (See Figure 1).

As predicted, hyperactivating ER strategies were moderately positively associated with distress ( $\beta = .43, p = .000$ ) and weakly inversely associated with wellbeing ( $\beta = -.11, p = .01$ ). Deactivating strategies were more positively associated with distress than anticipated ( $\beta = .31, p = .000$ ), and, contrary to the prediction, deactivating strategies were not associated with wellbeing ( $\beta = -.06, p = .206$ ). As anticipated, perspective taking was positively associated with wellbeing ( $\beta = .56, p = .000$ ) and inversely associated with psychological distress ( $\beta = -.24, p = .000$ ) (See Figure 2).

#### **Research Question 4: Does Emotion Regulation Mediate the Relationship between Adult Attachment and Mental Health**

Four separate mediations were proposed:

- 1) Hyperactivating ER strategies were expected to mediate the relationship between attachment anxiety and distress.

Contrary to what was hypothesized, the direct effect from attachment anxiety to distress ( $\beta = .11, p = .003$ ) did not decrease after including rumination in the model ( $\beta = .19, p = .000$ ), suggesting no evidence of full or partial mediation.

- 2) Deactivating ER strategies were expected to mediate the relationship between attachment avoidance and wellbeing.

While the direct effect from attachment avoidance to wellbeing ( $\beta = -.09$ ,  $p = .015$ ) decreased after including deactivating ER strategies in the model ( $\beta = .01$ ,  $p = .243$ ), the specific indirect effect was nonsignificant, suggesting no evidence of full or partial mediation.

- 3) Perspective taking was expected to mediate the relationship between attachment anxiety and distress.

As hypothesized, evidence emerged of a significant, partial indirect (i.e., mediated) effect of perspective taking on the relationship between attachment anxiety and distress. The direct effect of attachment anxiety on distress ( $\beta = .10$ ,  $p = .003$ ) decreased after including perspective taking in the model, and the specific indirect effect was significant ( $\beta = .04$ ,  $p = .001$ ) (See Table 6).

- 4) Perspective taking was expected to mediate the relationship between attachment avoidance and wellbeing.

Inconsistent with the prediction, the direct effect from attachment avoidance to wellbeing ( $\beta = -.11$ ,  $p = .005$ ) did not decrease after including perspective taking in the model ( $\beta = -.11$ ,  $p = .000$ ), suggesting no evidence of full or partial mediation.

#### **Research Question 5: Does Life Stress Moderate the Relationship between Attachment Style, Emotion Regulation, and Distress**

It was predicted that an individual's current degree of life stress would moderate the relationships between attachment style, emotion regulation, and psychological distress, such that the mediations would be stronger under conditions of high life stress (See Figure 1).

A MGA was run for each of the ten relevant mediation paths in order to determine whether mediations differed in strength between high stress and low stress groups. Based on a conservative  $p$ -value of .005 to adjust for pairwise error, all Wald Tests of Parameter Constraints were nonsignificant, suggesting that there was not a detectable difference between the high and low stress group when examining the relationship between adult

attachment, emotion regulation, and mental health. However, it's notable that the mediation path involving attachment anxiety, hyperactivating strategies, and wellbeing trended towards significance ( $W^S_{diff} = 7.062$ ,  $df=1$ ,  $p = .008$ ).



## **Chapter 5: Discussion**

It's widely accepted that the quality of the bonds we form in childhood persist to some degree into adulthood, and moreover, continue to impact interpersonal relationships and mental health. While a vast body of theoretical and empirical work has informed our understanding of attachment style and mental health, the exact mechanisms through which attachment continues to exert its influence on psychological outcomes throughout the lifespan is yet to be fully understood. In other words, it is most likely that attachment style does not exert its influence on adults' mental health directly, but rather impacts mental health through a number of mediating variables. This is particularly important when considering that attachment style is thought to be relatively stable throughout the lifespan. Focusing on a more malleable trait, like cognitive and emotional mediating variables, could prove more effective when treating individuals whose primary symptoms stem from early relational trauma.

When considering potential cognitive and emotional mediators, the proposed model relied on a basic tenet of attachment theory (Bowlby, 1969/1982, 1973, 1980): Attachment theory (AT) has been broadly defined as a theory of how individuals develop patterns of affect regulation (Main, 1990) in childhood that carry into adulthood. An idea that has recently gained currency and is discussed in the literature review is that affect regulation (AR) is nearly synonymous with emotion regulation (ER), a cognitive theory of how individuals manage emotions (Gross, 1998, 2002, 2010). Based on this, the current model tested the idea that insecurely attached adults develop unhelpful ER strategies in response to early, problematic relationships with primary caregivers, and that these particular ER strategies explain the relationship between insecure attachment styles and poor mental health outcomes (see Mikulincer & Shaver, 2007 for a review). Prior evidence discussed in the literature review supported the expectation that the reported use of hyperactivating strategies to ER (i.e., rumination) would mediate the relationship between attachment anxiety and distress, and that reported use of deactivating strategies

(i.e., experiential avoidance) would mediate the relationship between attachment avoidance and wellbeing (see Mikulincer, Shaver, & Pereg, 2003 for a review).

In addition to proposed mediations supported by previous findings, the hypothesized model also included a number of novel, exploratory mediations regarding a potentially helpful ER strategy termed *perspective taking*, which is broadly defined as the ability to consider multiple, alternative interpretations of distressing situations and emotions. As discussed in the literature review, it was generally thought that perspective taking would mediate the relationship between adult attachment and mental health outcomes. Since perspective taking shares similarities with how attachment secure individuals have reported navigating life's challenges (e.g., approaching problems in a variety of ways depending on the context of the situation) (Waters, 1999; Zimmerman, 1999), a conceptual case was made for the expectation that perspective taking abilities would mediate the relationship between high levels of attachment avoidance and/or attachment anxiety and poor mental health outcomes. Specifically, it was expected that perspective taking would inversely mediate the relationship between avoidant attachment and wellbeing and would positively mediate the relationship between attachment anxiety and distress.

Lastly, it was thought that an individual's current degree of life stress would impact the relationship between adult attachment, emotion regulation, and mental health. Specifically, it was expected that the strength of the proposed mediations would increase as life stress increased. As previously discussed, this made sense given that life stress has been thought to activate the attachment system and consequently increase dependency on attachment related ER strategies (Bowlby 1973, 1969/1982).

### **The Current Study**

Overall, the results of the current study supported existing evidence that insecure attachment styles are associated with psychological difficulties. As expected, attachment anxiety was associated with heightened levels of distress and attachment avoidance was

associated with low levels of wellbeing. Results also supported the notion that ER is uniquely associated with both attachment style and mental health. As expected, attachment anxiety was associated with the hyperactivating ER strategy, rumination, and rumination was also associated with heightened levels of distress. As was also anticipated, attachment avoidance was associated with the deactivating ER strategy, experiential avoidance.

The central emotion regulation construct of interest, perspective taking, demonstrated a relationship with both adult attachment and mental health. As expected, it was inversely associated with both attachment anxiety and attachment avoidance. It was also positively associated with wellbeing and inversely associated with distress. These findings regarding perspective taking not only shed light on the nature of the construct itself, but also add a unique dimension to our understanding of attachment, ER, and mental health.

Results of the current study also found evidence for direct relationships that were not hypothesized—specifically, attachment anxiety was positively associated with experiential avoidance, and experiential avoidance was not associated with wellbeing but was instead associated with heightened levels of distress. Later sections will address possible reasons for and implications of these unanticipated relationships.

While the majority of the proposed direct associations yielded expected results, the results of the proposed mediations varied. In contrast to what was hypothesized, hyperactivating ER strategies and deactivating ER strategies did not mediate any of the proposed paths between attachment and mental health. However, evidence did emerge for one partial mediation: Perspective taking was found to partially mediate the relationship between attachment anxiety and distress. In other words, the inability to attain perspective during difficult situations in part explains the heightened levels of distress reported by individuals high on anxious attachment. This finding is especially novel and

gives merit to the idea that perspective taking may be a potentially protective ER strategy.

Although several proposed mediations were not supported in this study, the majority of the hypothesized direct paths between variables were significant. The proposed mediations may be worth looking into further, especially when considering that issues with measurement affected the way in which certain variables of interest (e.g., hyperactivating strategies; wellbeing) were modeled. For instance, hyperactivating strategies did not hold up as a latent construct comprised of multiple measures of rumination, and was turned into an observed variable that consisted of only one short measure of rumination during analysis. It's possible that mediation could be detected if other hyperactivating strategies, like exaggeration of threats of hypervigilance to cues of abandonment, were also part of the latent factor.

Lastly, life stress did not significantly moderate any of the proposed mediations. However, in the presence of high life stress, there was a trend towards mediation whereby hyperactivating strategies (i.e., rumination) appeared to explain the relationship between attachment anxiety and wellbeing. This suggests that increased use of hyperactivating ER strategies during times of high life stress may in part explain low levels of wellbeing reported by individuals high on attachment anxiety.

While the results provided little evidence for the predicted moderations by life stress, these predictions warrant further investigation. In addition to the nearly significant path, it's likely that the way in which life stress was measured obscured the actual relationships: Rather than assessing solely for the types of events likely to trigger attachment-related distress (i.e., interpersonal events), the measure used took a broad range of life stressors into account.

For instance, an individual could have had a very high level of life stress due to endorsing experiences like a car wreck, failing a class, or losing a job—none of which are thought to be attachment-related threats. What is also likely is that this study lacked the

power (i.e., not a large enough sample size) needed to detect moderated mediations with a latent variable moderator.

### **Perspective taking.**

Perspective taking was a central construct of interest in this study and results regarding direct associations with attachment and mental health were all as predicted. Most notable is that perspective taking partially mediated the relationship between attachment anxiety and distress, which provides relatively strong preliminary evidence that perspective taking is a protective ER strategy (i.e., is associated with positive psychological outcomes). These findings also support the notion that perspective taking may be a way of regulating emotions that is a natural consequence of healthy early relationships. It makes sense that children who experience ordinary attachment-related distress and/or conflicts and are consistently met with the appropriate level of support would form the belief that negative feelings are not in themselves dangerous, and importantly, are temporary. In adulthood, this may manifest as feeling as though one does not need to alter and/or escape emotional discomfort, as the attachment secure individual seems to have internalized that negative feelings are tolerable and even inevitable. It makes sense that such an orientation towards distress would lead to an ability to appraise situations in a balanced manner and be flexible in approaching life's challenges.

It's also relevant to consider why those high on anxious and/or avoidant attachment reported an inverse relationship with perspective taking. Consistent with attachment theory, one plausible unifying theme is that individuals with insecure attachment styles are less confident in their ability to tolerate emotional pain (an ability that characterizes perspective taking). This makes sense when considering that both types of insecure attachment are associated with the presence of a primary caregiver who is unable to respond to the child in a manner that would cultivate such confidence in the child's ability to cope with emotional discomfort.

Another speculation consistent with attachment theory is that individuals high on anxious attachment and individuals high on avoidant attachment doubt their ability to tolerate distress for distinct reasons. In the case of avoidant attachment, a dismissive or punitive attachment figure imparts the idea that expressing distress is futile and/or dangerous, and thus the child develops strategies for avoiding the experience of distress. It is reasonable to assume that ideas inherent to perspective taking are in opposition to the attachment avoidant individuals' mindset, which assumes one must prevent contact with distressing emotions to ensure survival, whereas perspective taking involves an open approach to experiencing the gamut of emotions. Another likely consequence of attachment avoidance is impairment in emotional awareness: Through efforts to prevent emotional discomfort, attachment avoidant individuals may consequently become chronically detached from their own inner-experience and consequently experience difficulty accessing and identifying emotions (Fantini-Hauwel, Boudoukha, & Arciszewski, 2012). As engagement with and understanding of emotional experience is vital to perspective taking, it makes sense that this characteristic of attachment avoidance also contributes to difficulties with perspective taking.

In contrast, individuals high on anxious attachment may not engage in perspective taking because their formative experiences with an attachment figure were confusing and inconsistent. Because the attachment figure was sometimes available and sometimes not, the child maintained the belief that attachment needs could be met. However, the child may have resorted to exaggerated displays of distress in an effort to attain the attention of the caregiver. The belief that appears to carry into adulthood and is consistent with attachment theory is that in order to have needs met, distress must be not only maintained but also magnified. This is also in opposition to perspective taking, which is characterized by approaching negative emotions and situations in a flexible and balanced manner. Further, perspective taking is in part characterized by individuals' ability to regulate their own levels of distress, likely resulting in more brief, mild experiences of

distress—which is also theoretically contradictory to the orientation of the attachment anxious individual (Mikulincer & Shaver, 2007).

### **Experiential avoidance.**

Experiential avoidance (EA) is another approach to ER that is yet to be fully understood, but evidence thus far has made a case for its important role in the development and maintenance of psychological difficulties (Hayes et al., 1996; 2004). In this study, EA was treated as a multifaceted construct characterized by tendencies to stay out of contact with distressing thoughts, feelings, and situations, as well as strong underlying beliefs that to be happy means to never experience pain (Gamez et al., 2011). It was thought that multiple proposed facets of EA would comprise a single construct; However, only three of six measured components of EA held up in a factor analysis.

The avoidance of engaging in behaviors that pose a risk of eliciting negative emotions, the belief that pain is unbearable and precludes happiness, and feeling emotionally numb and/or unable to identify emotions represented EA in this study based on their ability to form a single construct. Engaging in thought suppression and distraction, putting off potentially uncomfortable tasks, and having a low tolerance for distress did not emerge as representative of EA as a whole.

This finding made sense upon further investigation: The three facets of EA that did not converge with the other facets seem to be somewhat more ordinary and less noxious tendencies. For instance, procrastination and distraction, while problematic when applied pervasively, are relatively common and harmless behaviors. Similarly, low distress tolerance is not quite as pathological as it sounds: Items that assess for this, like “I am willing to suffer for the things that matter to me” and “When working on something important, I won’t quit even if things get difficult,” allude to a resiliency that is not likely to be observed in the majority of people but rather in a somewhat smaller subset of individuals.

In contrast, the three facets of EA that comprised a single construct appear to be more detrimental to overall functioning. For instance, behavioral avoidance not only requires a great deal of effort, but it also prohibits individuals from encountering situations that may lead to growth and makes it unlikely that the individual will learn that distress is tolerable. The same seems true for the underlying belief that experiencing pain equates to the extinction of happiness—ironically, in an effort to increase chances of happiness, one avoids experiences that pose the risk of getting hurt but that potentially essential to fulfillment and joy (e.g., asking someone out on a date). It's possible that a consequence of this sort of lack of engagement with life can lead to emotional numbing. In ensuring that no pain is felt, one might also ensure that nothing else at all is felt. In sum, these three facets of EA seem to be not only more problematic than the former, but are also more in line with how attachment theory explains the tendencies of those high on attachment avoidance.

While EA was associated with attachment avoidance as expected, it was not associated with wellbeing (contrary to predictions). There are a number of possibilities that may explain this. First and as previously mentioned, wellbeing was represented only by positive affect, whereas attachment theory posits the lack of wellbeing observed in attachment avoidant individuals is likely explained by a lack of close relationships (the measure of close relationships, *emotional ties*, did not demonstrate adequate psychometrics and was thus excluded from the analysis). Also consistent with attachment theory is that individuals high on avoidant attachment may, as a consequence of emotional suppression, not be particularly psychologically aware. If this were the case, it would be expected that attachment avoidant individuals would be unable to accurately self-report about their emotional experiences.

Two other inconsistencies emerged in the findings related to EA: First, individuals high on attachment anxiety reported utilizing EA as an ER strategy. It's possible that attachment anxious individuals may rely on EA to quell distress when



hyperactivating strategies fail to quell attachment anxiety. Further, because both attachment anxious and attachment avoidant individuals reported using EA to regulate emotions, it's likely that EA functions differently for the two groups. Those who are high on attachment avoidance may rely on EA consistently, resulting in emotional numbness, whereas those high on attachment anxiety may rely on EA as a last resort when hyperactivating strategies fail. Second, EA was associated with distress, which was not initially predicted. This might be explained by the nature of EA itself—while EA has been shown to diminish negative emotions in the short-term, a “rebound effect” has also been observed, such that EA is only able to keep distress at bay for so long (Hayes et al., 1996, 2004). As EA may only be sustainable for a short-time, the distressing emotions become present again—possibly even stronger than before.

### **Strengths and Limitations**

#### **Strengths.**

The current study was unique in a number of ways and produced novel findings regarding the mediating role of emotion regulation in the relationship between adult attachment and mental health. In general, the study focused largely on a potential protective ER strategy (i.e., perspective taking). The use of SEM allowed for a more nuanced understanding of perspective taking, finding that it is seemingly comprised of multiple, similar ER strategies like big picture appraisal, cognitive reappraisal, and cognitive flexibility. This suggests that it may be more accurate to treat these constructs as one variable (i.e., perspective taking) rather than as individual constructs.

The study also found that perspective taking partially mediates the relationship between attachment anxiety and distress, an entirely novel finding that suggests an inability to attain perspective may in part explain the heightened levels of distress reported by attachment anxious individuals. This finding may also contribute to meaningful clinical implications, such as teaching perspective taking skills to those with insecure attachment styles to promote psychological health.

Further, the use of SEM also allowed for a deeper probe into the nature of experiential avoidance. Results confirmed that EA is indeed multifaceted, but that it is also uniquely related to attachment style and mental health. Overall, these findings regarding EA suggest that it is a more complex construct than previously thought, and that it potentially has explanatory power in the relationship between adult attachment and mental health.

The use of SEM additionally allowed for multiple, competing models to be tested. In other words, the hypothesized model was not immediately accepted despite numerous significant paths that confirmed predictions. Model fit indices, modification indices, and conceptual knowledge were used together to determine when respecification of paths were necessary and, ultimately, to arrive at the model that best fit the data.

### **Limitations.**

While the results of the current study are promising, some limitations and precautions in interpreting the data must be acknowledged. First, the study was cross-sectional, such that data were collected and analyzed from the sample at one specific point in time. While this type of design is common and acceptable, stronger inferences can be made with an experimental design. Further, when testing for mediation, time precedence is essential for results to be interpreted as “true” mediations. In the case of this particular study, this would have meant the same participants taking three separate surveys with appropriate gaps in time between administrations, with the first survey assessing for attachment styles, the second for emotion regulation, and the third for mental health variables. Thus, the partial mediation found in this study is considered preliminary evidence and replication with time precedence is necessary in order to draw strong conclusions.

Another limitation is that both the measurement and structural part of the model were extensively respecified. Although respecification is nearly always a part of SEM, it's widely agreed that when respecification is somewhat substantial, results should be

considered exploratory. Thus, the model needs to be replicated in a separate sample to further support the findings. Another consideration is that a primary strength of latent variable modeling is its unique ability to estimate the associations among variables with substantially less measurement error than in traditional regression. Because this model became partially latent (i.e., included observed variables) after respecification, it's possible that this contributed to measurement error.

Lastly, the final model consisted solely of self-report measures. Bias in responding to self-report measures has been shown to exist to some degree most of the time and typically manifests as a desire to present oneself in a more positive light (Robinson & Neighbors, 2006; Paulhus & John, 1998). To account for this, a cognitive processing measure, the BPA-SST, was administered in the study. Unfortunately, the measure did not load onto its respective factor and could not be included in the model. Although one would expect a different measure of the same construct to be at least moderately related, it's not uncommon for measures with distinct formats to perform quite differently (Cunningham, Preacher, & Banaji, 2001). This is also true for the measure of attachment used: While the ECRS possesses the best psychometric properties of self-report measures of attachment, it is not considered to be as accurate or powerful as the Adult Attachment Interview (AAI). Reasons the interview was not used are discussed in the literature review.

### **Future directions**

As mentioned above, the considerable amount of model respecification, or changes to the proposed relationships, resulted in the analyses being somewhat exploratory. Given this, it is a priority to test the final model in a separate sample in order to strengthen the conclusions of this study. Another important consideration for the future is to use time precedence such that attachment style, emotion regulation, and mental health are measured separately from one another and at three distinct, theoretically appropriate points in time. For example, individuals would first respond to the measure of

attachment style. Two weeks later, the same individuals would respond to emotion regulation questionnaires, and two weeks after that, they would complete measures of mental health. This change would allow for any mediations found to be considered “true” mediations.

It is also important that the measures used to capture the constructs of interest are reconsidered and a more parsimonious approach to measurement is used. For instance, including multiple measures of similar constructs may not be necessary if one measure is identified that can adequately capture the construct of interest. In the current study, the EQ\_R was included to assess for rumination. However, results suggested this questionnaire was not measuring the same construct as the other measure of rumination, the RRS. Upon further investigation, it was clear that the RRS was capturing rumination as the study intended—a tendency to repetitively think about the causes and consequences of one’s negative emotional experience (Nolen-Hoeksema, 1991)—while the EQ\_R was assessing for an individual’s overall tendency towards introspection.

Similarly, the measure of distress and wellbeing used (MHI) did not appear to assess for wellbeing and distress as broadly as these constructs were conceptualized in the study (e.g., distress was represented only by anxiety and depression in the MHI and wellbeing was represented only by positive affect and quality of close relationships). Alternatively, a measure that captures the aforementioned dimensions in addition to other relative facets of distress (i.e., loneliness, irritability, shame) and wellbeing (i.e., fulfillment, purposefulness) should be considered for use in future studies.

Also worth considering is that hyperactivating approaches to emotion regulation were represented by a single construct, rumination, while it’s likely that multiple hyperactivating strategies exist and that many of these strategies are behavioral. In the future, an appropriate measure of behavior should be included that assesses for how often an individual engages in various emotion upregulating behaviors (i.e., exaggerated displays of emotion; frequent and intense conflicts; acting out for attention). Other

hyperactivating approaches, such as hypervigilance to cues of abandonment and exaggeration of threats, should also be assessed for. This kind of careful consideration of measurement will ensure that constructs of interest are accurately represented and ideally will result in fewer changes to the proposed model (e.g., fewer measures will need to be left out of analysis).

### **Implications**

The current study adds weight to the claim that attachment continues to influence mental health throughout the lifespan. While attachment style is thought to be capable of changing based on adult relationships, including experiences in psychotherapy, the current medical model does not favor the long-term work that is often necessary to elicit this type of change. Given this limitation, it may be beneficial to target emotion regulation in individuals with insecure attachment styles. Given that emotion regulation is already a component of many psychotherapies, tailoring the emotion regulation work to the individual's unique attachment style could be more fruitful than a "one size fits all" approach.

This study also has implications for how we understand the behaviors and presentations unique to each of the attachment styles. For instance, it's long been known that insecure attachment styles are associated with problematic approaches to managing emotion. However, this relationship has not been explicitly delineated. Revealing the nuances of attachment-related behaviors allows for a deeper understanding of the individual and the individual's motivations. This could also contribute to our understanding of how to best approach psychotherapy and tailor the approach to the individual.

### **Conclusion**

Overall, results of the current study supported the widely accepted notion that insecure attachment styles result in psychological difficulties and secure attachment styles lead to positive psychological outcomes. However, a body of theoretical and

empirical work suggests that attachment style does not exert its influence on mental health directly but rather does so through a number of mediating variables. This study provided evidence for the potential explanatory role of emotion regulation in the relationship between attachment style and mental health.

Previous findings that individuals high on anxious attachment engage in hyperactivating ER strategies and that individuals high on avoidant attachment engage in deactivating ER strategies were replicated. Moreover, evidence was found in support of the idea that individuals low on attachment anxiety and/or attachment avoidance engage in perspective taking, a flexible and balanced approach to managing emotions, while those high on attachment anxiety and/or avoidance do not.

Most compelling was the finding that the absence of perspective taking in individuals high on anxious attachment partially mediated heightened levels of distress. That an inability to take perspective in part explained the heightened levels of distress reported by attachment anxious individuals suggests not only that perspective taking is potentially a protective ER strategy, but also that building perspective taking skills may mitigate some of the emotional difficulties attachment anxious individuals report. A continued focus on the mediating role of emotion regulation within this paradigm could have significant implications for understanding how best to approach insecure attachment styles in adulthood.

## APPENDICES

### Appendix A

#### Demographic Questions

1. What is your sex?
2. What is your age?
3. Are you currently in a relationship?
4. Which of the following best describes your race/ethnicity?

African-American/Black (please specify ethnic group if applicable)

Hispanic-American/Latino/Chicano (please specify ethnic group if applicable)

Native-American (please specify ethnic group if applicable)

Asian-American (please specify ethnic group if applicable)

South-Asian American or Pacific Islander (please specify ethnic group if applicable)

Caucasian/European-American (please specify ethnic group if applicable)

Middle Eastern/Arab-American (please specify ethnic group)

Biracial or Multiracial (please specify ethnic groups)

Other (please specify)

5. Please estimate your family's current total household income (the family you grew up with):

Between \$0 and \$25,000

Between \$25,001 and \$65,000

Between \$65,001 and \$120,000

Greater than \$120,000

6. Were you born in the US?
7. If you were not born in the US, where were you born?

## Appendix B

### **The Scrambled Sentences Test for Big Picture Appraisal (SST-BPA)**

Participants are asked to unscramble the following sentences (choosing 5 of the 6 words) in order to form statements.

- 1 mostly others to I'm similar not
- 2 can I learn fear cannot from
- 3 think I pain lasting is temporary
- 4 badly people often few all feel
- 5 doesn't me suffering wiser make does
- 6 weird I normal think I am
- 7 seldom most bad feel people often
- 8 quickly painful cannot shift can emotions
- 9 my weak human show faults I'm
- 10 don't me do difficult damage situations\
- 11 like everyone has none feelings me
- 12 sadness tends linger pass always to
- 13 do learn I don't failures from
- 14 experience few other many failure people
- 15 believe I shameful human is sadness
- 16 to end seems anxiety always never
- 17 unlike really other am I like
- 18 things time do don't with improve
- 19 happens rejection some people all to
- 20 sadness cannot from learn can I
- 21 people insecurities have do all don't
- 22 problems grown I have from haven't
- 23 lasting is long suffering isn't often



24 happen to painful me events everyone  
25 experiences cannot me can teach painful  
26 unusual people rejection all experience do  
27 stay does usually distress doesn't around  
28 last moods to seem pass bad  
29 me painful do experiences don't benefit  
30 means mistakes normal making flawed I'm  
31 sadness doesn't lessons bring valuable does  
32 other no scared many feel people  
33 fairly I'm not think I typical  
34 moods away go do bad don't  
35 are feelings my definitely universal not  
36 failure my indicate humanness can worth  
37 learn I rejection may from won't  
38 inappropriate having is clearly human anxiety  
39 nervous often people feel few all  
40 don't always better do things get

## Appendix C

### Big Picture Appraisal Questionnaire

**Directions:**

Please think back to times when you have felt upset or unhappy. Many different situations provoke such feelings (e.g., when you felt you had failed or did not live up to your own or others' expectations, or when you experienced a loss, or felt rejected), and the emotions involved may vary (e.g., hurt, anger, sadness, grief, jealousy). Rate each of the following items on a scale from 1 to 5 to indicate how often you have had thoughts similar to those listed.

**Response Scale:**

1-----2-----3-----4-----5  
Never Rarely Sometimes Frequently Very  
Frequently

**Stem:**

*When I am upset or unhappy...*

1. I remember that other aspects of my life are going better.
2. I remind myself that I will grow from this experience.
3. I know that other areas of my life are going okay.
4. I remind myself that painful experiences are a part of everyone's life.
5. I know I will be able to come to terms with this.
6. I reflect on how people I know have gone through similar situations.
7. I know this situation will teach me things.
8. I understand that the situation will look different to me after some time passes.
9. I view this as a part of life's lessons.
10. I stay aware of what I can do well.
11. I find inspiration in other people's experiences.
12. it feels like I will be wiser from this.
13. I remind myself that what I am experiencing is something everyone feels.
14. I know there is value in painful experiences.
15. I remind myself that I have felt this bad before and come out of it.
16. I know that this is only part of my life.
17. I realize that I will learn from this.
18. I am aware that other people often feel the way that I do.
19. I remind myself that suffering is part of life.
20. I know there is value in experiencing my emotions fully.
21. I remind myself that everyone suffers sometimes.
22. I know that others share experiences like mine.
23. I know that there are many ways to view the difficult situation

## Appendix D

### Experiences Questionnaire (EQ)

Please use the following scale to answer the items listed below.

Never					All the time
1	2	3	4	5	

1. I think about what will happen in the future
2. I remind myself that thoughts aren't facts.
3. I am better able to accept myself as I am.
4. I notice all sorts of little things and details in the world around me.
5. I am kinder to myself when things go wrong.
6. I can slow my thinking at times of stress.
7. I wonder what kind of person I really am.
8. I am not so easily carried away by my thoughts and feelings.
9. I notice that I don't take difficulties so personally.
10. I can separate myself from my thoughts and feelings.
11. I analyze why things turn out the way they do.
12. I can take time to respond to difficulties.
13. I think over and over again about what others have said to me.
14. I can treat myself kindly.
15. I can observe unpleasant feelings without being drawn into them.
16. I have the sense that I am fully aware of what is going on around me and inside me.
17. I can actually see that I am not my thoughts.
18. I am consciously aware of a sense of my body as a whole.
19. I think about the ways in which I am different from other people.
20. I view things from a wider perspective.

## Appendix E

## Emotion Regulation Questionnaire (ERQ)

The Emotion Regulation Questionnaire is designed to assess individual differences in the habitual use of two emotion regulation strategies: cognitive reappraisal and expressive suppression.

## Instructions and Items

We would like to ask you some questions about your emotional life, in particular, how you control (that is, regulate and manage) your emotions. The questions below involve two distinct aspects of your emotional life. One is your emotional experience, or what you feel like inside. The other is your emotional expression, or how you show your emotions in the way you talk, gesture, or behave. Although some of the following questions may seem similar to one another, they differ in important ways. For each item, please answer using the following scale:

1-----2-----3-----4-----5-----6-----

-----7

strongly                      strongly                      neutral

disagree

agree

1. When I want to feel more positive emotion (such as joy or amusement) I change what I'm thinking about.
2. I keep my emotions to myself.
3. When I want to feel less negative emotion (such as sadness or anger), I change what I'm thinking about.
4. When I am feeling positive emotions, I am careful not to express them.
5. When I'm faced with a stressful situation, I make myself think about it in a way that helps me stay calm.
6. I control my emotions by not expressing them.
7. When I want to feel more positive emotion, I change the way I'm thinking about the situation.
8. I control my emotions by changing the way I think about the situation I'm in.
9. When I am feeling negative emotions, I make sure not to express them.
10. When I want to feel less negative emotion, I change the way I'm thinking about the situation.

## Appendix F

### Cognitive Flexibility Inventory (CFI)

Please use the scale below to indicate the extent to which you agree or disagree with the following statements.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree

1. I am good at “sizing up” situations.
2. I consider multiple options before making a decision.
3. I like to look at difficult situations from many different angles.
4. I seek additional information not immediately available before attributing causes to behavior.
5. I try to think about things from another person’s point of view.
6. I am good at putting myself in others’ shoes.
7. It is important to look at difficult situations from many angles.
8. When in difficult situations, I consider multiple options before deciding how to behave.
9. I often look at a situation from different viewpoints.
10. I consider all available facts and information when attributing causes to behavior.
11. When I encounter difficult situations, I stop and try to think of several ways to resolve it.
12. I can think of more than one way to resolve a difficult situation I’m confronted with.
13. I consider multiple options before responding to difficult situations.

## Appendix G

### Mental Health Inventory (MHI)

Items are scored on a likert scale, ranging from 1 (not at all) to 5 (very often).

#### Anxiety (A)

Very nervous person  
Bothered by nervousness  
Felt tense or high-strung  
Anxious, worried  
Difficulty trying to calm down  
Nervous or jumpy  
Restless, fidgety, impatient  
Rattled, upset, flustered  
Hands shake when doing things  
Relax without difficulty<sup>c</sup>

#### Depression (D)

Moody, brooded about things  
Low or very low spirits  
Felt downhearted and blue  
Felt depressed  
Strain, stress, pressure<sup>c</sup>

#### Loss of Behavioral/Emotional Control (B)

Control behavior, thoughts, feelings  
Concern about losing control of mind  
Felt emotionally stable  
Nothing turns out as wanted  
Felt like crying  
Better off if dead  
Down in the dumps  
Think about taking own life  
Nothing to look forward to

#### General Positive Affect (G)

Happy person  
Happy, satisfied, or pleased  
Daily life interesting  
Felt calm and peaceful  
Felt cheerful, lighthearted

**Generally enjoyed things**

**Relaxed and free of tension**

**Living a wonderful adventure**

**Expect an interesting day**

**Wake up fresh, rested**

**Future hopeful, promising**

#### Emotional Ties (E)

**Felt loved and wanted**

**Love relations full, complete**

**Time felt lonely<sup>c</sup>**

## Appendix H



Please indicate the extent to which you agree or disagree with each of the following statements

	1 strongly disagree	2 moderately disagree	3 slightly disagree	4 slightly agree	5 moderately agree	6 strongly agree
1. I won't do something if I think it will make me uncomfortable .....	1	2	3	4	5	6
2. If I could magically remove all of my painful memories, I would .....	1	2	3	4	5	6
3. When something upsetting comes up, I try very hard to stop thinking about it .....	1	2	3	4	5	6
4. I sometimes have difficulty identifying how I feel .....	1	2	3	4	5	6
5. I tend to put off unpleasant things that need to get done .....	1	2	3	4	5	6
6. People should face their fears .....	1	2	3	4	5	6
7. Happiness means never feeling any pain or disappointment .....	1	2	3	4	5	6
8. I avoid activities if there is even a small possibility of getting hurt .....	1	2	3	4	5	6
9. When negative thoughts come up, I try to fill my head with something else .....	1	2	3	4	5	6
10. At times, people have told me I'm in denial .....	1	2	3	4	5	6
11. I sometimes procrastinate to avoid facing challenges .....	1	2	3	4	5	6
12. Even when I feel uncomfortable, I don't give up working toward things I value .....	1	2	3	4	5	6
13. When I am hurting, I would do anything to feel better .....	1	2	3	4	5	6
14. I rarely do something if there is a chance that it will upset me .....	1	2	3	4	5	6
15. I usually try to distract myself when I feel something painful .....	1	2	3	4	5	6
16. I am able to "turn off" my emotions when I don't want to feel .....	1	2	3	4	5	6
17. When I have something important to do I find myself doing a lot of other things instead...	1	2	3	4	5	6
18. I am willing to put up with pain and discomfort to get what I want .....	1	2	3	4	5	6
19. Happiness involves getting rid of negative thoughts .....	1	2	3	4	5	6
20. I work hard to avoid situations that might bring up unpleasant thoughts and feelings in me	1	2	3	4	5	6
21. I don't realize I'm anxious until other people tell me .....	1	2	3	4	5	6
22. When upsetting memories come up, I try to focus on other things .....	1	2	3	4	5	6
23. I am in touch with my emotions .....	1	2	3	4	5	6
24. I am willing to suffer for the things that matter to me .....	1	2	3	4	5	6
25. One of my big goals is to be free from painful emotions .....	1	2	3	4	5	6
26. I prefer to stick to what I am comfortable with, rather than try new activities .....	1	2	3	4	5	6
27. I work hard to keep out upsetting feelings .....	1	2	3	4	5	6
28. People have said that I don't own up to my problems .....	1	2	3	4	5	6
29. Fear or anxiety won't stop me from doing something important .....	1	2	3	4	5	6
30. I try to deal with problems right away .....	1	2	3	4	5	6

31.	I'd do anything to feel less stressed .....	1	2	3	4	5	6
32.	If I have any doubts about doing something, I just won't do it .....	1	2	3	4	5	6
33.	When unpleasant memories come to me, I try to put them out of my mind .....	1	2	3	4	5	6
34.	In this day and age people should not have to suffer .....	1	2	3	4	5	6
35.	Others have told me that I suppress my feelings .....	1	2	3	4	5	6
36.	I try to put off unpleasant tasks for as long as possible .....	1	2	3	4	5	6
37.	When I am hurting, I still do what needs to be done .....	1	2	3	4	5	6
38.	My life would be great if I never felt anxious .....	1	2	3	4	5	6
39.	If I am starting to feel trapped, I leave the situation immediately .....	1	2	3	4	5	6
40.	When a negative thought comes up, I immediately try to think of something else .....	1	2	3	4	5	6
41.	It's hard for me to know what I'm feeling .....	1	2	3	4	5	6
42.	I won't do something until I absolutely have to .....	1	2	3	4	5	6
43.	I don't let pain and discomfort stop me from getting what I want .....	1	2	3	4	5	6
44.	I would give up a lot not to feel bad .....	1	2	3	4	5	6
45.	I go out of my way to avoid uncomfortable situations .....	1	2	3	4	5	6
46.	I can numb my feelings when they are too intense .....	1	2	3	4	5	6
47.	Why do today what you can put off until tomorrow .....	1	2	3	4	5	6
48.	I am willing to put up with sadness to get what I want .....	1	2	3	4	5	6
49.	Some people have told me that I "hide my head in the sand" .....	1	2	3	4	5	6
50.	Pain always leads to suffering .....	1	2	3	4	5	6
51.	If I am in a slightly uncomfortable situation, I try to leave right away .....	1	2	3	4	5	6
52.	It takes me awhile to realize when I'm feeling bad .....	1	2	3	4	5	6
53.	I continue working toward my goals even if I have doubts .....	1	2	3	4	5	6
54.	I wish I could get rid of all of my negative emotions .....	1	2	3	4	5	6
55.	I avoid situations if there is a chance that I'll feel nervous.....	1	2	3	4	5	6
56.	I feel disconnected from my emotions .....	1	2	3	4	5	6
57.	I don't let gloomy thoughts stop me from doing what I want .....	1	2	3	4	5	6
58.	The key to a good life is never feeling any pain .....	1	2	3	4	5	6
59.	I'm quick to leave any situation that makes me feel uneasy .....	1	2	3	4	5	6
60.	People have told me that I'm not aware of my problems .....	1	2	3	4	5	6
61.	I hope to live without any sadness and disappointment .....	1	2	3	4	5	6
62.	When working on something important, I won't quit even if things get difficult .....	1	2	3	4	5	6



## Appendix I

### Rumination Scale

People think and do many different things when they feel depressed. Please read each of the items below and indicate whether you almost never, sometimes, often, or almost always think or do each one when you feel down, sad, or depressed. Please indicate what you generally do, not what you think you should do.

1 almost never 2 sometimes 3 often 4 almost always

1. think about how alone you feel
2. think "I won't be able to do my job if I don't snap out of this"
3. think about your feelings of fatigue and achiness
4. think about how hard it is to concentrate
5. think "What am I doing to deserve this?"
6. think about how passive and unmotivated you feel.
7. analyze recent events to try to understand why you are depressed
8. think about how you don't seem to feel anything anymore
9. think "Why can't I get going?"
10. think "Why do I always react this way?"
11. go away by yourself and think about why you feel this way
12. write down what you are thinking about and analyze it
13. think about a recent situation, wishing it had gone better
14. think "I won't be able to concentrate if I keep feeling this way."
15. think "Why do I have problems other people don't have?"
16. think "Why can't I handle things better?"
17. think about how sad you feel.
18. think about all your shortcomings, failings, faults, mistakes
19. think about how you don't feel up to doing anything
20. analyze your personality to try to understand why you are depressed
21. go someplace alone to think about your feelings
22. think about how angry you are with yourself

## Appendix J

### **The Experiences in Close Relationships Questionnaire- Revised**

I'm afraid that I will lose my partner's love.  
I often worry that my partner will not want to stay with me.  
I often worry that my partner doesn't really love me.  
I worry that romantic partners won't care about me as much as I care about them.  
I often wish that my partner's feelings for me were as strong as my feelings for him or her.  
I worry a lot about my relationships.  
When my partner is out of sight, I worry that he or she might become interested in someone else.  
When I show my feelings for romantic partners, I'm afraid they will not feel the same about me.  
I rarely worry about my partner leaving me.  
My romantic partner makes me doubt myself.  
I do not often worry about being abandoned.  
I find that my partner(s) don't want to get as close as I would like.  
Sometimes romantic partners change their feelings about me for no apparent reason.  
My desire to be very close sometimes scares people away.  
I'm afraid that once a romantic partner gets to know me, he or she won't like who I really am.  
It makes me mad that I don't get the affection and support I need from my partner.  
I worry that I won't measure up to other people.  
I prefer not to show a partner how I feel deep down.  
I feel comfortable sharing my private thoughts and feelings with my partner.  
I find it difficult to allow myself to depend on romantic partners.  
I am very comfortable being close to romantic partners.  
I don't feel comfortable opening up to romantic partners.  
I prefer not to be too close to romantic partners.  
I get uncomfortable when a romantic partner wants to be very close.  
I find it relatively easy to get close to my partner.  
It's not difficult for me to get close to my partner.  
I usually discuss my problems and concerns with my partner.  
It helps to turn to my romantic partner in times of need.  
I tell my partner just about everything.  
I talk things over with my partner.  
I am nervous when partners get too close to me.  
I feel comfortable depending on romantic partners.  
I find it easy to depend on romantic partners.  
It's easy for me to be affectionate with my partner.  
My partner really understands me and my needs.

*Table 1. Demographic and socioeconomic indicators of study participants (N=585)*

Variable	<i>n</i>	Frequency (%)	<i>M</i>	<i>SD</i>
Age	585		20.7	1.7
Gender				
Female	300	51.3		
Male	285	48.7		
Race/Ethnicity				
African-American/Black	34	5.8		
Hispanic-American/Latino/Chicano	109	18.6		
Native-American	1	0.2		
Asian-American	136	23.2		
Caucasian/ European-American	268	45.8		
Middle Eastern/Arab-American	13	2.2		
Multiracial	20	3.4		
Other	4	0.7		
International Student				
Yes	25	4.2		
No	560	95.8		
Socioeconomic Status				
Working Class	84	14.4		
Middle Class	224	38.3		
Upper Middle Class	230	39.3		
Upper Class	44	7.5		
Other	3	0.5		
Currently in a Romantic/Intimate Relationship				
Yes	260	44.4		
No	269	46.0		
It's complicated	56	9.6		

*Table 2. Perceived socioeconomic status (N=585)*

Participant Response	<i>n</i>	Frequency (%)
1 “Worst off”	0	0
2	4	.7
3	20	3.4
4	43	7.4
5 “Average”	75	12.8
6	104	17.8
7	172	29.4
8	119	20.3
9	39	6.7
10 “Best off”	9	1.5

*Note.* Survey responses ranged from “1” *worst off* to “10” *best off* based on income, education, and jobs. Thus, higher values represent higher perceived socioeconomic status.

Table 3. Correlations, means, and standard deviations among observed variables (N=585)

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1.BPAQ	82.20	16.96	-	.62**	.37**	-.13**	-.18**	-.13**	.14**	-.16**	-.36**	-.16**	.57**	.52**	-.27**	-.27**	-.28**	.50**	-.21**	-.23**
2.EQ_D	44.31	8.38		-	.34**	-.12**	-.13**	-.19**	.14**	-.13**	-.39**	-.27**	.59**	.54**	-.34**	-.32**	-.34**	.50**	-.24**	-.14**
3.EQ_R	22.62	3.77			-	.05	.14**	.09*	.13**	-.03	-.27**	.19**	.30**	.53**	.04	.06	-.04	.15**	.13**	-.13**
4.MEAQ_BA	37.07	9.17				-	.67**	.45**	.50**	.59**	.18**	.34**	-.11**	-.14**	.42**	.31**	.40**	-.07	.29**	.16**
5.MEAQ_DA	44.45	10.87					-	.31**	.50**	.55**	.09*	.43**	-.13**	-.15**	.38**	.38**	.43**	-.12**	.29**	.10**
6.MEAQ_P	26.31	6.32						-	.23**	.39**	.16**	.41**	-.14**	-.03	.32**	.35**	.29**	-.19**	.25**	.07**
7.MEAQ_DS	26.16	5.71							-	.32**	-.17**	.24**	.24**	.10*	.16**	.12**	.13**	.22**	.11**	-.01**
8.MEAQ_RD	39.40	11.44								-	.21**	.37**	-.10*	-.23**	.38**	.36**	-.54**	-.18**	.28**	.33**
9.MEAQ_DE	31.24	8.56									-	.08	-.35**	-.41**	.15**	.13**	.29**	-.47**	.10*	.24**
10.RRS	51.52	14.02										-	-.20**	-.07	.54**	.62**	.55**	-.25**	.44**	.12**
11.CFI	69.04	12.77											-	.45**	-.27**	-.26**	-.28**	.46**	-.14**	-.21**
12.MHI_A	27.56	7.90												-	-.26**	-.18**	-.28**	.33**	-.13**	-.22**
13.MHI_D	16.91	5.33													-	.71**	.69**	-.27**	.40**	.13**
14.MHI_BC	21.59	6.64														-	.72**	-.35**	.37**	.18**
15.MHI_PA	34.04	6.98															-	-.36**	.40**	.28**
16.EQRS_1	3.89	1.36																-	-.23**	-.26**
17.EQRS_2	3.43	1.27																	-	.40**

Table 3 (Continued)

Note. \*  $p < .05$ ; \*\*  $p < .01$

Note. \* BPAQ= Big Picture Appraisal Questionnaire; EQ\_D = Experiences Questionnaire, Decentering ; EQ\_R = Experiences Questionnaire, Rumination ; MEAQ\_BA = Multidimensional Experiential Avoidance Questionnaire, Behavioral Avoidance; MEAQ\_DA = Multidimensional Experiential Avoidance Questionnaire, Distress Aversion ; MEAQ\_P = Multidimensional Experiential Avoidance Questionnaire, Procrastination ; MEAQ\_DS = Multidimensional Experiential Avoidance Questionnaire, Distraction/Suppression ; MEAQ\_RD = Multidimensional Experiential Avoidance Questionnaire, Repression/Denial ; MEAQ\_DE = Multidimensional Experiential Avoidance Questionnaire, Distress Endurance; RRS= Ruminative Response Scale; CFI = Cognitive Flexibility Inventory ; MHI\_A= Mental Health Inventory, Anxiety; MHI\_D= Mental Health Inventory, Depression; MHI\_BC= Mental Health Inventory, Loss of Behavioral Control; MHI\_PA= Mental Health Inventory, Positive Affect; EQRS\_1 = Experiences in Close Relationships Scale, Attachment Anxiety; EQRS\_2 = Experiences in Close Relationships Scale, Attachment Avoidance.

*Table 4. Fit indices for competitive model testing*

<b>Model</b>	$\chi^2$	<i>df</i>	CFI	RMSEA	CI 90%
Model A	530.48	68	.874	.108	.099 - .116
Model B	331.70	62	.927	.086	.077 - .095
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<i>Model Comparison</i>	$\chi^2$ difference	<i>df</i> difference	Significance testing		
Model A vs. Model B	198.777	6	$p = .000$		

Table 5. Factor loadings across all latent constructs (N=585)

Construct	Loading	p
<i>Perspective Taking</i>		
<b>Big Picture Appraisal (BPAQ)</b>	<b>.78</b>	<b>.000</b>
<b>Self-Distancing (EQ-D)</b>	<b>.81</b>	<b>.000</b>
<b>Cognitive Flexibility (CFI)</b>	<b>.66</b>	<b>.000</b>
<b>Reappraisal (ERQ-R)</b>	<b>.72</b>	<b>.000</b>
Scrambled Sentences Test for BPA (SST-BPA)	.27	.000
<i>Deactivating Strategies (Experiential Avoidance)</i>		
<b>Behavioral Avoidance</b>	<b>.84</b>	<b>.000</b>
<b>Distress Aversion</b>	<b>.79</b>	<b>.000</b>
<b>Repression and Denial</b>	<b>.70</b>	<b>.000</b>
Procrastination	.43	.000
Distraction and Suppression	.52	.000
Distress Endurance	.38	.000
<i>Distress</i>		
Depression	.86	.000
Anxiety	.81	.000
Loss of Behavioral Control	.84	.000

Note. Factor loadings presented are standardized. Factors and indicators included in the final model appear in bold.



Table 6. Tests of indirect effects (N=585)

Path	Mplus estimate of indirect effects			Sobel test	
	Indirect	Direct	Total	z	p
<b>Attachment Anxiety → Perspective Taking → Distress</b>	<b>.04***</b>	<b>.10***</b>	<b>.14***</b>	<b>2.22</b>	<b>.03*</b>
Attachment Anxiety → Rumination → Distress	.19***	.10***	.29***	-	-
Attachment Anxiety → Experiential Avoidance → Distress	.09***	.10***	.19***	-	-
Attachment Anxiety → Perspective Taking → Wellbeing	-.10***	-.02	-.12	-	-
Attachment Anxiety → Rumination → Wellbeing	-.05**	-.02	-.07	-	-
Attachment Anxiety → Experiential Avoidance → Wellbeing	.02	-.02	-.00	-	-
Attachment Avoidance → Perspective Taking → Wellbeing	-.11***	-.11***	-.22***	-	-
Attachment Avoidance → Experiential Avoidance → Wellbeing	.01	-.11***	-.10	-	-

Note. Bold paths highlight significant evidence or trends suggestive of partial mediation.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ . <sup>†</sup>  $p < .10$ .

Table 7. Wald tests of parameter constraints for multiple group analysis (N=585)

Path	$W_{diff}^S$	df	p
Attachment Anxiety→Perspective Taking→Distress	2.84	1	.091
Attachment Anxiety→Deactivating→Distress	0.06	1	.815
Attachment Anxiety→Hyperactivating→Distress	0.06	1	.802
Attachment Anxiety →Perspective Taking→Wellbeing	3.02	1	.082
Attachment Anxiety →Deactivating→Wellbeing	0.02	1	.878
<b>Attachment Anxiety →Hyperactivating→Wellbeing</b>	<b>7.06</b>	<b>1</b>	<b>.008</b>
Attachment Avoidance →Perspective Taking→Wellbeing	1.62	1	.204
Attachment Avoidance →Deactivating→Wellbeing	0.05	1	.826
Attachment Avoidance →Perspective Taking→Distress	0.31	1	.575
Attachment Avoidance →Deactivating→Distress	2.25	1	.133

*Note.* Paths that trended towards significant appear in bold.

*Note.* A conservative *p* value of .005 was used to adjust for pairwise error when testing for significance.

Figure 1. Proposed Model

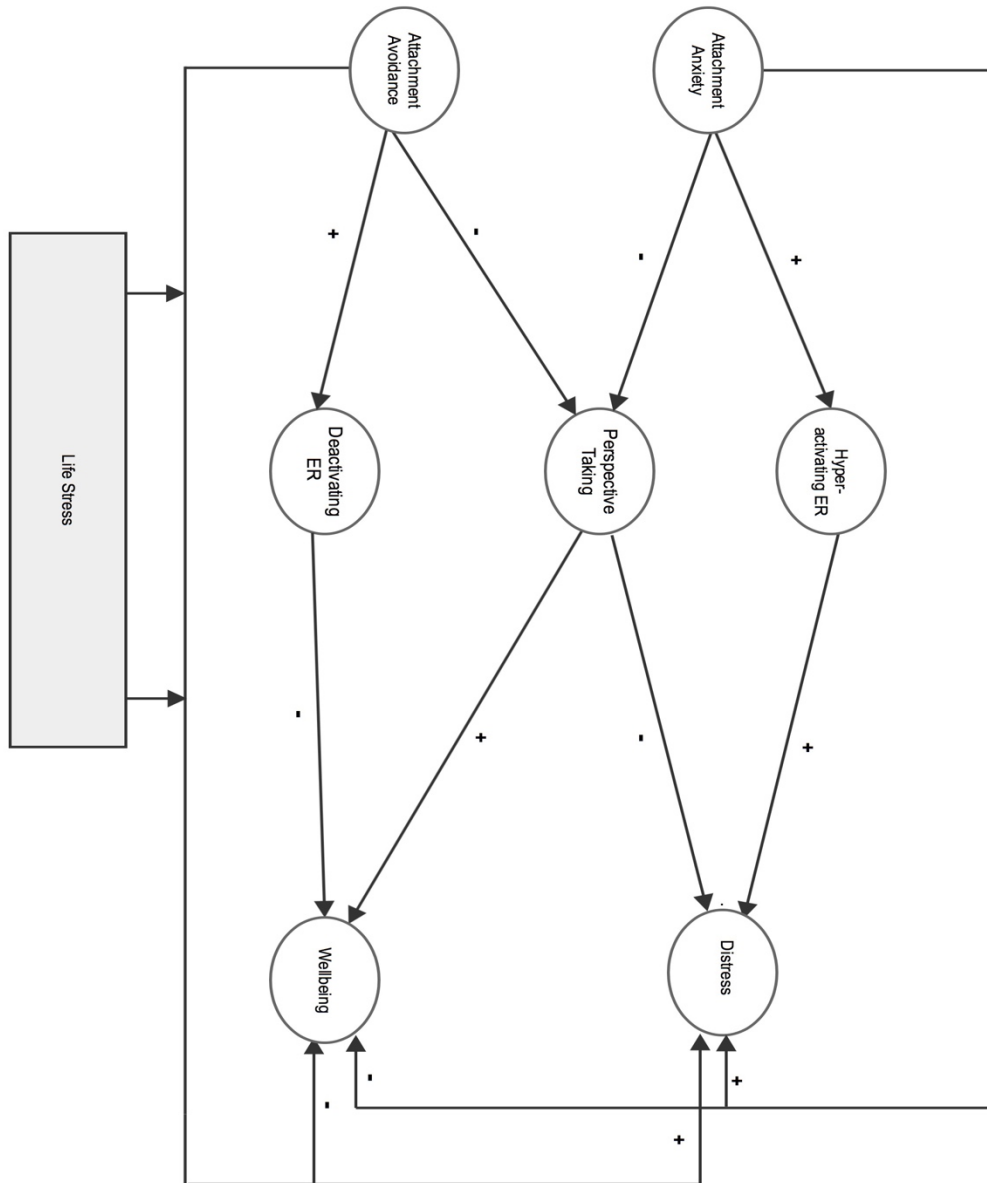
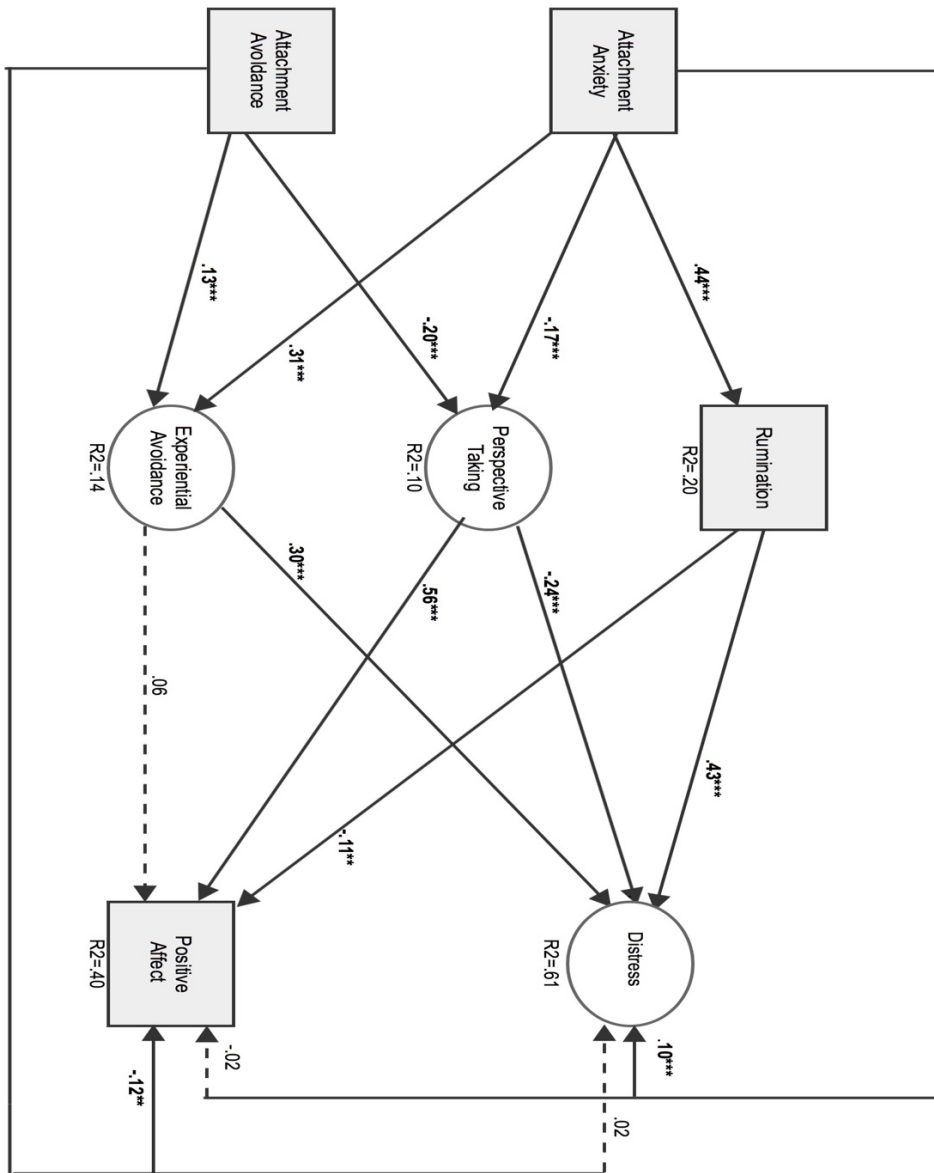


Figure 2. Final Modified Model



Dashed lines represent nonsignificant paths. Solid lines represent significant paths.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

## References

- Adler, N. E., Epel, E. S., Castellazzo, G., & Ickovics, J. R. (2000). Relationship of subjective and objective social status with psychological and physiological functioning: preliminary data in healthy white women. *Health Psychology, 19*(6), 586-592.
- Ainsworth, M., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: Assessed in the Strange Situation and at home*. Hillsdale, NJ: Erlbaum.
- Ainsworth, M. (1989). Attachments beyond infancy. *American Psychologist, 44*, 709-716. doi:10.1037/0003-066X.44.4.709
- Ainsworth, M. (1991). Attachment and other affectional bonds across the life cycle. In C. M. Parkes, J. Stevenson-Hindle, & P. Marris (Eds.), *Attachment across the life-cycle* (pp. 33-51). New York: Routledge.
- Alloy, L.B., Abramson, L.Y., Whitehouse, W.G., Hogan, M.E., Panzarella, C., & Rose, D.T. (2006). Prospective incidence of first onsets and recurrences of depression in individuals at high and low cognitive risk for depression. *Journal of Abnormal Psychology, 115*, 145-156. doi:10.1037/0021-843X.115.1.145
- Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four category model. *Journal of Personality and Social Psychology, 61*, 226-244. doi:10.1037/0022-3514.61.2.226

- Bifulco, A., Moran, P. M., Ball, C., & Bernazzani, O. (2002). Adult attachment style: I. Its relationship to clinical depression. *Social Psychiatry and Psychiatric Epidemiology*, 37, 50-59. doi:10.1007/s127-002-8215-0
- Bowlby, J. (1969/1982). *Attachment and loss: Vol. 1. Attachment* (2nd ed.). New York: Basic Books. (Original work published 1969)
- Bowlby, J. (1973). *Attachment and loss: Vol. 2. Separation: Anxiety and anger*. New York: Basic Books.
- Bowlby, J. (1979). *The making and breaking of affectional bonds*. London: Tavistock.
- Bowlby, J. (1980). *Attachment and loss: Vol. 3. Sadness and depression*. New York: Basic Books.
- Bowlby, J. (1988). *A secure base: Clinical applications of attachment theory*. London: Routledge.
- Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult romantic attachment: An integrative overview. In J. A. Simpson, & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 46-76). New York: Guilford Press.
- Brennan, K.A., & Shaver, P. R. (1995). Dimensions of adult attachment, affect regulation, and the dynamics of romantic relationships. *Personality and Social Psychology Bulletin*, 21, 267-283. doi:10.1177/0146167295213008
- Cassidy, J. (1994). Emotion regulation: Influences of attachment relationships. *Monographs of the Society for Research in Child Development*, 59, 228-283. doi:10.2307/1166148

- Cunningham, W. A., Preacher, K. J., & Banaji, M. R. (2001). Implicit attitude measures: Consistency, stability, and convergent validity. *Psychological science*, 12(2), 163-170.
- Fantini-Hauwel, C., Boudoukha, A. H., & Arciszewski, T. (2012). Adult attachment and emotional awareness impairment: a multimethod assessment. *Socioaffective neuroscience & psychology*, 2, 10744.
- Florian, V., Mikulincer, M., & Bucholtz, I. (1995). Effects of adult attachment style on the perception and search for social support. *Journal of Psychology: Interdisciplinary and Applied*, 129, 665-676. doi:10.1080/00223980.1995.9914937
- Fraley, R. C. (1999). Types or dimensions of relating: Taxometrics as a tool for the study of personal relationships. *ISSPR Bulletin*, 16, 3-4.
- Fraley, R. C. (2002). Attachment stability from infancy to adulthood: Meta-analysis and dynamic modeling of developmental mechanisms. *Personality and Social Psychology Review*, 6, 123-151. doi:10.1207/S15327957PSPR0602\_03
- Fraley, R. C., Roisman, G. I., Booth-LaForce, C., Owen, M. T., & Holland, A. S. (2013). Interpersonal and genetic origins of adult attachment styles: A longitudinal study from infancy to early adulthood. *Journal of Personality and Social Psychology*, 104, 8817-8838. doi:10.1037/a0031435
- Fraley, R. C., & Shaver, P. R. (1997). Adult attachment and the suppression of unwanted thoughts. *Journal of Personality and Social Psychology*, 73, 1080-1091. doi:10.1037/0022-3514.73.5.1080

- Fraley, R. C., & Waller, N. G. (1998). Adult attachment patterns: A test of the typological model. In J. A. Simpson, & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 77-114). New York: Guilford Press.
- Gámez, W., Chmielewski, M., Kotov, R., Ruggero, C., & Watson, D. (2011). Development of a measure of experiential avoidance: The Multidimensional Experiential Avoidance Questionnaire. *Psychological Assessment*, 23(3), 692.
- Gross, J.J. (1998). The emerging field of emotion regulation: An integrative review. *Review of General Psychology*, 2, 271-299. doi:10.1037/1089-2680.2.3.271
- Gross, J. J. (2002). Emotion regulation: Affective, cognitive, and social consequences. *Psychophysiology*, 39(3), 281-291.
- Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, 85, 348–362. doi:10.1037/0022-3514.85.2.348
- Gross, J. (2010). Emotion regulation. In M. Lewis, J. M. Haviland-Jones, & L. Feldman-Barrett (Eds.), *Handbook of Emotions* (pp. 497-512). New York, NY: Guilford Press.
- Hayes, S. C., Wilson, K. G., Gifford, E. V., Follette, V. M., & Strosahl, K. (1996). Experiential avoidance and behavioral disorders: A functional dimensional approach to diagnosis and treatment. *Journal of consulting and clinical psychology*, 64(6), 1152.



- Hayes, S. C., Strosahl, K., Wilson, K. G., Bissett, R. T., Pistorello, J., Toarmino, D., ... & Stewart, S. H. (2004). Measuring experiential avoidance: A preliminary test of a working model. *The psychological record*, 54(4), 553-578.
- Hazan, C., & Shaver, P. R. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology*, 52, 511-524.  
doi:10.1037/0022-3514.52.3.511
- Hazan, C., & Shaver, P. R. (1994). Attachment as an organizational framework for research on close relationships. *Psychological Inquiry*, 5, 1-22. doi: 10.1207/s15327965pli0501\_1
- Ingram, R. E. (2003). Origins of cognitive vulnerability to depression. *Cognitive Therapy and Research*, 27, 77-88. doi:10.1023/A:1022590730752
- Karreman, A., & Vingerhoets, A. J. J. M. (2012). Attachment and well-being: The mediating role of emotion regulation and resilience. *Personality and Individual Differences*, 53, 821-826. doi:10.1016/j.paid.2012.06.014
- Lopez, F. G., Mitchell, P., & Gormley, B. (2002). Adult attachment orientations and college student distress: Test of a mediational model. *Journal of Counseling Psychology*, 49, 460-467. doi:10.1037/0022-0167.49.4.460
- Main, M. (1990). Cross-cultural studies of attachment organization: Recent studies, changing methodologies, and the concept of conditional strategies. *Human Development*, 33, 48-61. doi:10.1159/000276502

- Mikulincer, M. (1998). Adult attachment style and individual differences in functional versus dysfunctional experiences of anger. *Journal of Personality and Social Psychology*, 74, 512-524. doi:10.1037/0022-3514.74.2.513
- Mikulincer, M., & Orbach, I. (1995). Attachment styles and repressive defensiveness: The accessibility and architecture of affective memories. *Journal of Personality and Social Psychology*, 68, 917-925. doi:10.1037/0022-3514.68.5.917
- Mikulincer, M., & Shaver, P. R. (2003). The attachment behavioral system in adulthood: Activation, psychodynamics, and interpersonal processes. In M. P. Zanna (Ed.), *Advances in Experimental Social Psychology* (Vol. 35, pp. 53-152). New York: Academic Press
- Mikulincer, M., & Shaver, P. R. (2007). *Attachment in Adulthood*. New York: Guilford Press. 146
- Mikulincer, M., Birnbaum, G., Woddis, D., & Nachmias, O. (2000). Stress and accessibility of proximity-related thoughts: Exploring the normative and intraindividual components of attachment theory. *Journal of Personality and Social Psychology*, 78, 509-523. doi:10.1037/0022-3514.78.3.509
- Mikulincer, M., Shaver, P. R., & Pereg, D. (2003). Attachment theory and affect regulation: The dynamics, development, and cognitive consequences of attachment-related strategies. *Motivation and Emotion*, 27, 77-102. doi:10.1023/A:1024515519160
- Nezlek, J. B., & Kuppens, P. (2008). Regulating positive and negative emotions in daily life. *Journal of personality*, 76(3), 561-580.

- Paulhus, D. L., & John, O. P. (1998). Egoistic and moralistic biases in self-perception: The interplay of self-deceptive styles with basic traits and motives. *Journal of personality*, 66(6), 1025-1060.
- Robinson, M. D., & Neighbors, C. (2006). Catching the mind in action: Implicit methods in personality research and assessment. *Handbook of multimethod measurement in psychology*, 115-125.
- Shaver, P. A., Collins, N. L., & Clark, C. L. (1996). Attachment styles and internal working models of self and relationship partners. In G. J. O. Fletcher & J. Fitness (Eds.), *Knowledge structures in close relationships: A social psychological approach* (pp. 25-61). Mahwah, NJ: Erlbaum.
- Shaver, P. R., & Hazan, C. (1993). Adult romantic attachment: Theory and evidence. In D. Perlman & W. Jones (Eds.), *Advances in personal relationships* (Vol. 4, pp. 29-70). London: Kingsley.
- Shaver, P. R., Hazan, C., & Bradshaw, D. (1988). Love as attachment: The integration of three behavioral systems. In R. Sternberg & M. Barnes (Eds.), *The psychology of love* (pp. 68-99). New Haven, CT: Yale University Press.
- Shaver, P. R., & Mikulincer, M. (2002). Attachment related psychodynamics. *Attachment and Human Development*, 4, 133-161. doi:10.1080/14616730210154171
- Shaver, P. R., & Mikulincer, M. (2004). What do self-report attachment measures assess? In W.S. Rholes, & J. A. Simpson (Eds.), *Adult attachment: Theory, research, and clinical implications* (pp. 17-54). New York: Guilford Press.

Shaver, P.R., & Clark, C.L. (1994). The psychodynamics of adult romantic attachment.

In J.M. Masling & R.F. Bornstein (Eds.), *Empirical perspectives on object relations theories* (pp.105-156). Washington, DC: American Psychological Association.

Wei, M., Liao, K. Y., Ku, T., & Shaffer, P. (2011). Attachment, self-compassion, empathy, and subjective well-being among college students and community adults. *Journal of Personality*, 79, 191-221. doi:10.1111/j.1467-6494.2010.00677

Wei, M., Mallinckrodt, B., Larson, L. M., & Zakalik, R. (2005). Adult attachment, depressive symptoms, and validation from self-versus others. *Journal of Counseling Psychology*, 52, 368-377. doi:10.1037/0022-0167.52.3.368

Zimmermann, P. (1999). Structure and functions of internal working models of attachment and their role for emotion regulation. *Attachment & Human Development*, 1, 291-206. doi:10.1080/14616739900134161